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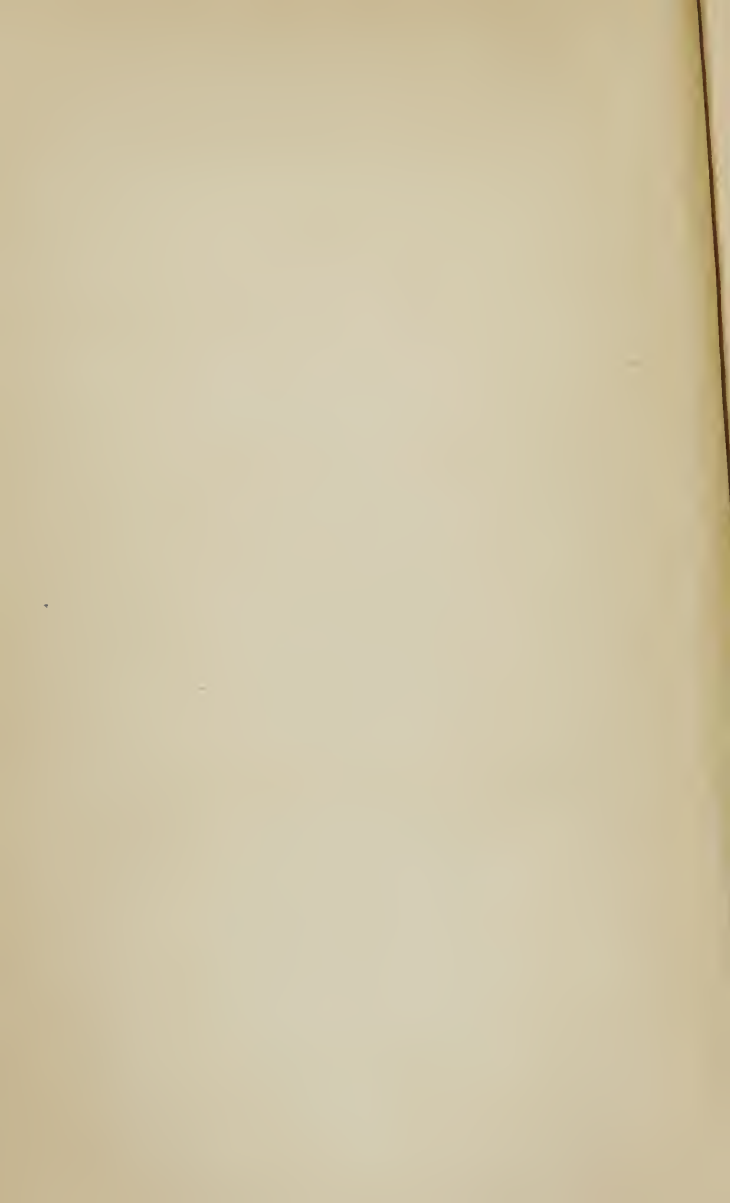
ANNEX

Section,

No.

101129.







# HINTS ON HEALTH;

WITH

## FAMILIAR INSTRUCTIONS

FOR THE

Treatment and Preservation

OF THE

SKIN, HAIR, TEETH, EYES, ETC.

BY



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Third Edition, thoroughly revised, with Additions.



BOSTON:

TICKNOR AND FIELDS.

M DCCC LVII.

QTA  
C652h  
1857

Entered according to Act of Congress, in the year 1855, by  
WILLIAM-EDWARD COALE,  
In the Clerk's Office of the District Court of the District of Massachusetts.

Stereotyped by  
HOBART & ROBBINS,  
New England Type and Stereotype Foundry,  
BOSTON.

## P R E F A C E .

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IN reviewing several works on the preservation of health, it occurred to us that a person might rise from a perusal of them much in the same condition as that of a distinguished jurist, who, though his head was filled with the legal lore of centuries, was inconveniently arraigned and fined for the infringement of a municipal law, of the existence of which he was wholly unaware. In other words, the reader might be thoroughly informed as to the nature and functions of the greater organs of the system, — the brain, the lungs, the stomach, — and upon the best means of keeping them in good condition, and yet have his comfort greatly interfered with by the derangement of some lesser portion of the economy, not thought worthy of mention among the other more important ones. To remedy this defect in books on health, — to gather up these unconsidered trifles, as they may be called in one sense, yet surely not so in all, — to bring them under the sway of medical science, to which they legitimately belong, but whence many of them have greatly strayed, — to apply to them, for the benefit of the sufferer, the same principles of prevention and cure that observation and experience have shown applicable to like affections, on a more extended scale, or in more vital parts, — in short, to deal with these lesser abuses and *diseases* of our system, with the same reference to common sense, to science and to reason, that we strive to effect in graver matters, — has been our essay in this little book.

Perceiving a use for our work, we have not slighted any means of fitting it to fulfil that use; but have descended into every detail, however small, — into every particular, however trifling, — which we have thought necessary in attaining our end. In doing this, consistently with our chief object, we have divested the subject, as much as possible, of all technical words; have omitted all theories, except where we felt it due to the reason of the reader to give the one on which our advice is founded; have advised only that which a reference to the laws of physiology, assisted by experience, shows to be good, — ignoring all crude notions, and simply popular nostrums, no matter how great favorites they may have been.

As our book is, we believe, the first of its particular kind, we have had no one to consult with regard to its general plan and method, or for the bulk of its detail. We feel pleasure, however, in expressing our obligations to the little work of Mr. Erasmus Wilson (the highest English authority on the subject), on “The Healthy Skin, &c.” From this we have received most valuable suggestions as to the manner in which diseases of that portion of our system should be considered, and as to their relation to the general health. And where Mr. Wilson has done so well, we have not cared to resort to a too common expedient, of re-casting the original matter into new words.

For the rest, we have tried to give credit, as far as possible, to the various sources of our information; not wishing to shirk responsibility, for that we assume in promulgating it, but on the honorable principle, correct in trifles as well as in great things, “honor to whom honor is due.”

# PREFACE

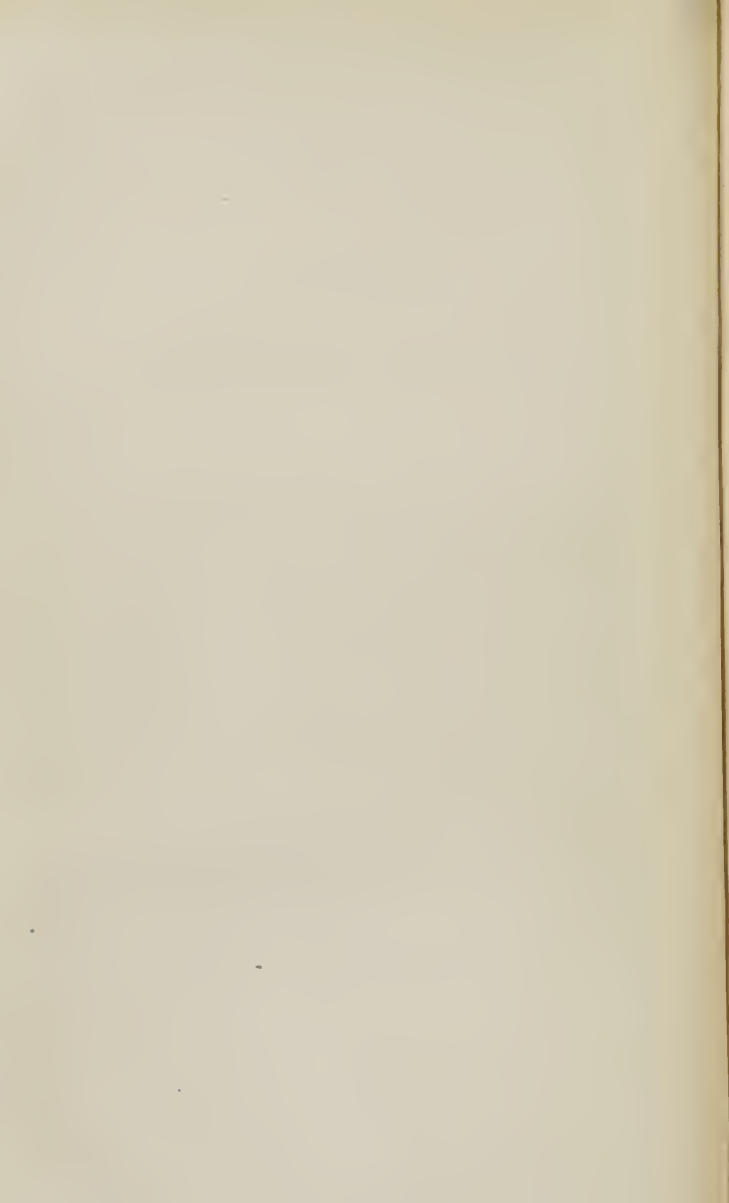
TO THE THIRD EDITION.

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THE success with which this little book met on its first publication would have justified a much earlier issue of another edition, but circumstances prevented.

In reviewing it, some alterations which seemed advisable have been made. These consist chiefly in re-writing more carefully passages which were thought liable to misconception, and in omitting some of the few technicalities and details which seemed unnecessary, replacing them with more useful matter.

The objection made to the size of the type used in the former edition will be found to be perfectly null in the present one.



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## HINTS ON HEALTH.

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### THE SKIN.

THE skin presents itself to us as first in interest among the subjects of which we intend to treat, whether as viewed with relation to the highly important part it momentarily plays in health, or to its liability to disease, and the number of affections which may, in this latter condition, interfere with the proper performance of its functions.

Its most obvious and simple use is as a covering to every external part of the body. To fit it to this use, we find it to be a membrane, soft, pliable and elastic, and yet resistant, varying in thickness according to the necessities of the part which it covers: thus, attenuated and supple to the last degree upon the eyelids; thickened upon the palms of the hands; and still further so, to an almost indefinite extent, upon the soles of the feet; and, with the same purpose, thicker upon the outside of the limbs than on their inner surfaces, — thicker on the shoulders and back than on the sides under the arms. It must be noticed, too, that the relative degree of thickness is not fixed, but, in the performance of this use as a covering and protection, it may, even upon accidental necessity, be thickened sufficiently to suit the wants of any other portion which may demand such care. It thus, by an increase of thickness, protects the part under the arm from the head of a crutch, — the outside of the seamstress' finger from the

rubbing of the thread, — the shoemaker's knee from the lap-stone. And again, when this use of a part ceases, the skin in time returns to its former condition, and is thin and pliant as before.

The outside of the body is not alone thus protected, but the internal portions are also similarly provided with a covering, which, though at first sight apparently very different, yet possesses, in fact, many properties, both of structure and use, similar to those of the skin. This internal skin may be seen, readily, where it lines the eyelids, the nostrils, and the mouth, thinner and redder than the skin, and bedewed, constantly, with a fluid called *mucus*, from which it takes its name, *mucous membrane*. In health, this mucus is just sufficient to keep the surface moist; but, by any irritating cause, it may be greatly increased in quantity, — as in colds in the head, snuff in the nose, foreign bodies under the eyelids.

The differences between this membrane and the internal skin, with which, it must be noted, it is everywhere continuous, seem only those which grow out of a difference of use; and, the use being changed, either membrane may change into the other, to suit it to the new demand upon it. Thus, in cases of contractions from burns, where the lip is drawn outward and its inner surface exposed, this inner surface soon becomes paler and thicker, and finally assimilates itself perfectly with the rest of the external skin; or, were a portion of the skin drawn in by any cause, it would in a like manner soon become, to all intents and purposes, mucous membrane.

This interchange of structure and use between these two membranes suggests the existence of a close relation in other matters between them, which we find, indeed, actually to exist, and to play a highly important part in our economy, both for good and evil; so much so, that, where the one is materially affected by disease, the other almost invariably sympathizes to greater or less extent. This will explain for

the most part the coincidence of dyspepsia and bad complexions; the "going in," as it is called, of an eruption, and the grave symptoms following within; the suppression of perspiration, and internal discomfort; fever-sores around the mouth; itching of the nose in children troubled with worms; eruptions caused by certain articles of diet, such as lobster, etc.

Were its use as a covering the sole one the skin had to perform, its structure might be very simple. This, however, is not the case. We find it has a sensibility varying in different parts of the body; that it exudes a fluid — perspiration; that it affords growth to certain appendages — the hair and nails. For all these purposes its structure must provide, as well as for others which will be explained in due time. Its construction, therefore, is complex, and varying in this complexity according to the demands upon it.

Examining its thickness, we find it is not constituted of one layer of membrane, but obviously of two or three, adapted each to the performance of some particular part in the several uses of the skin.

#### THE SCARF-SKIN.

The outermost of these layers is the scarf-skin, or *epidermis*. It is that which is raised by blistering, leaving beneath it a sensitive, redder layer, — the true skin, or *dermis*. It is composed of a material very like horn in composition, and is insensible, thus serving to protect the sensitive true skin, and to dull impressions upon it, which would otherwise prove acutely painful.

As might be supposed from its situation and use, this scarf-skin is exposed to continual wear; so that its outer surface is, in longer or shorter time, according to its situation, removed, presenting a fresh surface, which, in due time, is in like manner removed. The whole thickness of the layer would thus in time be exhausted, were there not a provision made for its

continual renewal. This is accomplished by the vessels immediately beneath it, which pour out a thin, transparent, glutinous fluid, that soon hardens into minute granules or globules, each endowed with a vitality that enables it to do its part towards the aggregation of the whole into the dense scarf-skin.

The fluid continuing to be poured out, another layer of granules is formed beneath, raising the layer of cells from the true skin. This last layer of granules goes through the same process as the first, and is, in turn, raised by still another. In the mean time, the particles of the outer one become dry, are flattened down, and finally form a pellicle or coating composed of thin scales. These scales, as we have before said, are worn off where the skin is exposed to attrition; and even where it is not they are continually falling off, to be replaced by new ones, so that the scarf-skin may preserve its uniform thickness.

This process of nature, in removing the outer layer of these scales, and replacing it with a new one, is obviously with the intent of freeing the skin from impurities which might clog its pores, induce diseased action in the finer vessels, and embarrass it in the performance of several of its duties; and shows us one means of preserving it in a healthy state, and of consequently ministering to our well-being, viz., by washing the skin in a proper manner, and with proper means.

The most common and simplest of these latter is pure water. This should be habitually used, at such a temperature as to give the sensation of slight coolness. If very cold, besides the unpleasant sensation produced, it roughens the skin, hardens it, and exposes it to an unequal and undue action, both from the hands in washing and the towel in wiping it. The reaction, too, when the blood driven from the part by the cold returns, is too violent, and an unpleasantly rough and hard condition of the outer skin ensues, causing it to crack or chape, and often laying the foundation of very troublesome sores.

Water at too high a temperature has an equally prejudicial effect, by softening and detaching too many of the scales, leaving the scarf-skin too thin, and insufficient to perform its use as a protector to the sensitive layer beneath; besides which, it has an effect similar to that of water too cold, in disturbing the circulation beneath, and inducing the same chapping, and frequently ugly eruptions.

As an assistant to water, we use soap, — a compound of a caustic alkali, a highly acrid substance, as its name would indicate, with an oil or fat. The alkali has a strong affinity or desire to unite with animal matter; and the result of a perfect union of the two, in such proportion that neither is in excess, is a mild, unirritating compound. Soap is a compound of the two, but in such proportions that the alkali is in excess; and the propensity, so to speak, of this excess to combine with the oil upon the skin, and with the surface of the scarf-skin, gives the soap its cleansing properties.

With this simple explanation of the action of soap upon the skin, the requisites for good soap, as well as the cause of the imperfect or injurious action of much of that substance, may be easily understood. If the alkali is too little in excess, — if it is already so united to the oil or fat used in its manufacture that there is none left to combine with that upon the skin, — it is inert and useless. If it is greatly in excess, its action is too powerful; it removes too much of the scarf-skin; leaves the part beneath tender; if continued, irritates the vessels, and has the same effects that the use of hot water has, but to a much higher degree. How much excess there should be, to produce the proper effect, it is difficult to give a rule for, because all skins are not equally susceptible. Some will not show the slightest irritation under the use of soap that might prove highly acrid to another. Kesan and Castile soaps are without any irritating quality; but the odor of the first, and the hardness of the last are grounds of objection to them. The

odor of the Kesan is not, however, lasting, and we have found it a soap particularly fitted for medical purposes, and for children.\*

If, when using even the most approved emolient soaps, irritation is caused, their irritating influence may be removed in the following manner:—Shave up a cake of the soap, and put it into a wedgewood mortar, with as much soft water as will cover it. When it has perfectly softened, add to it some oil of sweet almonds, taking care that it is not rancid. Rub it up with a pestle until it is a paste of uniform consistence. Keep this in a convenient jar with a cover to it. The effect of this process, it will be readily understood, is to neutralize a portion of the free alkali which caused the irritation. About the quantity of oil to be used it is difficult to give a rule, for it must differ both with the kind of soap and with the susceptibility of the skin. It is obvious that our endeavors should aim at using just such a quantity as will precisely neutralize that portion of the excess of alkali that serves to irritate. For the common Windsor soap, we have found that a teaspoonful and a half may be used to the cake, and not lessen too much its cleansing properties.

In the last few years, soaps containing sand and powdered pumice-stone have come much into use. These we cannot but

\* We would suggest to the reader, if a soap is found that suits perfectly, to lay in a supply of it, being sure that it is obtained from the identical lot with that experimented upon. Our best manufacturers do not always succeed in reproducing a perfectly similar article, and the next product may not be as equally free from unirritating properties as the first. We may mention here, too, that, of all the soaps made in this country that we have as yet experimented upon, we give the preference to Hauel's and to Taylor's transparent washballs. Highly perfumed soaps should be avoided. The perfume is given, except in almond soap, by an essential oil; and though this may be used in such small quantities as to produce no sensible effect, it is nevertheless of an irritating nature.

look upon as injurious. They must exert an irritating influence upon the skin, and, when constantly used, remove too rapidly the surface of the scarf-skin; besides which, the addition of sand is wholly unnecessary, if the soap itself is in the first place properly made. At the same time, we can bear witness, from experience, to the perfect freedom from harm, and the delightful sensations produced, and soft, smooth state of the skin left, by scrubbing it occasionally with fine sea-sand. The objection we make is to adopting it as an habitual article for the toilet.

When soap is found to cause chapping in the winter time, Indian meal is often used instead. This is a very harmless substitute, — but only a substitute, — acting by the attrition of its rough particles, and thus mechanically removing impurities. But the various washing-powders, of which so many are advertised, should be wholly avoided. If they act chemically, they are only soap pulverized; if they act mechanically, they cannot be better than Indian meal. In either case, then, nothing is gained; and it is always better to let positive well alone, than adopt a very doubtful better.

If, in spite of all care in selecting mild and unirritating soap, there should be still an unpleasant irritation of the surface produced, the fault must be looked for either in some innate constitutional peculiarity, of which we have known several instances, or in some temporary derangement of the system, which should be combated by proper remedies.

Having said thus much upon washing, it might be deemed too great particularity to give any direction about drying the skin, did we not find extreme notions very prevalent, which must lead to injurious practices. Some, under fear of injuring the complexion, never rub the skin with a towel, — supposing an unhealthy irritation of the surface, causing coarseness, would be thus produced, — but dry it by simply applying the cloth, and that a very fine one, to the surface. Two disadvan-

tages might result from this: 1st. The impurities may not be sufficiently removed, but portions of the emulsion formed by the soap, the scarf-skin, and the dirt, may still be left in the depressions of the skin. 2dly. Unless time and care be both taken, from the slowly absorbing power of fine towels, the surface is apt to be insufficiently dried, and to be afterwards irritated by the evaporation of the moisture left. On the other hand, some persons seem to pride themselves upon the coarseness of the towels they use, and apparently think that the benefits of an ablution are heightened in direct ratio with the roughness of the crash they use to dry themselves with. This is equally an error with the former extreme. The roughness of the towel must be proportioned to the sensitiveness of the skin. Some will bear a coarser cloth than others. Two towels should be used: the first of crash, of sufficient roughness to produce an agreeable glow after the necessary friction; next a coarse towel, but of loose texture, and highly absorbing quality, as hueabae, should be passed more gently and slowly over the part, until perfect dryness is produced.

#### COLOR OF THE SKIN.

We have thus disposed of the scarf-skin, so far as it is merely a covering and protection to the true skin; and have laid down the rules necessary to be followed to preserve it in good condition for performing this office properly. It has, however, other properties, which make it of still further interest to us. It is the seat of the coloring matter of the skin, which is contained in the granules of its deeper layer. Even in the fairest, these are not without some color; which is increased in quantity, and deepened in tint, in brunette complexion, and reaches its maximum, in both respects, in the negro. The chemical nature of this pigment is as yet not understood, from the difficulty of obtaining it in sufficient quantities for analysis. The amount of it varies, even in the



same skin, under different influences. Thus, the heat of the summer increases it, whilst cold diminishes it. Disease, or even a temporary derangement of the internal organs, may have a similar effect upon it. In some cases, persons are born without it, either in the skin or in any of the animal tissues, causing that peculiar appearance in the individual called albinism. This may also occur during life, either wholly or partially, though we do not remember a case of it, except in negroes, who thus become piebald or white. With other animals, albinism is more common than with man; the rabbit presenting very frequent examples of it, characterized, as in man, by a total want of color in the skin and hair, and by eyes reflecting a pink light.

The coloring matter of the skin seems evidently the result of a design which is exhibited continually all through nature, and yet which it is not easy to fully and satisfactorily explain, though many theories, and highly plausible ones, have been broached for its elucidation. The rule is, that the colder the climate, the fairer the color, whether it be of the skin of man, the hair of animals, or the petals of flowers; and the reverse, — the nearer the tropics, the darker the hue, the richer and deeper the tint. It most probably has direct reference to the activity of the vessels of the skin, which, under the influence of the light and heat of the tropics, are stimulated to great energy, and thus relieve the internal organs, whilst in a colder climate the activity is wanted by the assimilating organs, those that turn food into flesh and blood.

The supply of coloring matter to the skin is not free from a liability to derangement. It may cease partially or entirely, as we have just mentioned, in partial and total albinism, but its faults are most commonly in the other direction. The tint of the granules in the blonde is exceedingly light; in brunettes, amber-colored; in the Indian and mulatto, reddish; and in the negro, black. Whatever the complexion, it may,

under injurious influence, alter in tint and in hue to greater or less extent, causing in some cases freckles, in others liver-colored spots, and even an almost entire change of complexion in some. This last phenomenon has been several times noticed in fevers. The most frequent cause of alteration of the complexion, however, is atmospheric influence. The great vicissitudes of temperature, in our climate, are particularly obnoxious to fine complexions. During the summer we have a sun equalling at times that of the tropics, and stimulating the vessels of the skin to an activity which induces great increase in the development of coloring matter; while, in winter, bleak winds and an exceedingly depressed temperature embarrass their action, and induce rapid blanching. Still further to affect the equality of their action, our climate is one of the driest in the world; and the moisture on the skin, which in other warm regions remains to keep it in a pliant state, is with us rapidly removed by evaporation, leaving the skin beneath harsh and unelastic. To these natural influences, then, we must attribute, for a great part, the want of freshness and brilliancy of complexion, and softness and smoothness of skin, which foreigners notice so much in both sexes; and so far as it does proceed from this cause, so far it is irremediable, except that a few direct precautions — such as common sense would so readily indicate as to make it unnecessary to mention them here — may be used against them; but these will prove very limited in their value as preventives. Something might be done, however, indirectly to protect us from these influences, by strengthening the system generally, by genially stimulating the circulation by exercise in the open air, and by properly-directed bathing; by modifying the often too greatly heightened temperature of our houses in winter; by insuring a freer supply of fresh air by day, and still more particularly by night.

That most common form of discoloration, called freckles, is

of two kinds: the one consisting of round or irregular-shaped amber-colored dots, of various sizes, occurring chiefly in persons of light complexion,—more particularly of that tint always associated with auburn and red hair. These are generally developed during the summer,—most frequently in children, and are called sun-freckles; the other kind consists in various-colored spots, amber, yellow, or pale-green, and may appear at any season. The first, for the most part, disappear with their exciting cause, during the winter; the latter are dependent upon constitutional causes, and are more persistent.

Large yellowish or liver-colored spots, irregular in shape, and occurring, unlike freckles, on all parts of the skin, are frequently met with, most often in summer, but appearing also in winter. These, at times, evidently depend upon disturbance of the functions of the internal organs, though at others, if so caused, the disturbance is so slight as to escape detection. For the first kind of freckles, and for the last-mentioned spots, many washes have been devised, and many empiric lotions are sold. Some of them may be efficacious; but there is one objection to all such applications, namely, that the ingredients, unknown, may be deleterious. The most efficient agent that we have found in removing them is a solution of the liver of sulphur, in the proportion of ten grains to an ounce of water. The drawback to the use of this is the odor, which is exceedingly disagreeable. When other applications fail, it may, however, prove of service; and we therefore give it with the suggestion that, by using it at night, the disagreeable odor may be prevented from annoying others at least. Mr. Wilson gives the following:

Elder-flower Ointment, one ounce.

Sulphate of Zinc, twenty grains.

Mix it well.

Rub this well into the skin at night, and in the morning

wash it thoroughly away with an abundance of soap, and apply a lotion made as follows :

Infusion of Rose-leaves, one half pint.

Citric Acid, thirty grains. — Mixed.

If these applications should irritate, and cause roughness of the skin, use, as a lotion,

Almond Mixture, one half pint.

Goulard's Extract, one half drachm. — Mixed.

If the spots are attended with constitutional derangement, it is scarcely necessary to say that a physician should be consulted. Other discolorations, in which the fault is not solely in the granules of the scarf-skin, will be treated of separately, in another place.

#### THE SENSITIVE SKIN.

When the scarf-skin has been removed, there is discovered, beneath, a surface looking very much like that of the scarf-skin, but redder, and moist ; and the part, when thus recently exposed, smart. This is the true or *sensitive* skin ; and the peculiarities just mentioned, by which it differs in appearance and sensibility from the scarf-skin, tell us already something of its construction. In the beginning we described the skin, collectively, as a soft, pliant, and elastic membrane, adapted to the covering and protection of the organs beneath it. The scarf-skin, of itself, can, as may be judged from its construction just described, possess these qualities to but a trifling extent, and, consequently, do but little towards fulfilling this office. It is, therefore, to the true skin that we must look for its performance ; and, accordingly, upon examination, we find its construction admirably adapts it to what is required of it. The lower layer, or that termed the corium, is constructed of very minute fibres collected into small bundles, and these are interwoven with each other so as to form a firm, strong and

flexible web. Toward the outer surface, the web is so close as to have the character of a porous felt; but, more deeply, the pores become progressively larger, and upon the inner surface have a diameter somewhat less than the twelfth part of an inch. The pores are round or oval in shape, and are separated from each other by strands of fibres double their own diameter, which give to the under surface of the skin the appearance of a coarse net. The strands are connected with the fibrous web in which the fat that lies immediately under the skin is deposited, and the open meshes of this net-like structure are filled with little bags of fat. This admirable arrangement is fully carried out, too, in the constitution of the fibres themselves. These are of four kinds: the greater part are white and unelastic, but so arranged as to give elasticity to the membrane, just as various kinds of net-work may have elasticity, though the thread of which they are made be without it; others are highly elastic, but brittle; a third class have both strength and elasticity, and have a contractile power, independent of and in addition to the elasticity; whilst a fourth kind are, as it were, muscular, and have the faculty of independent, and, in some instances, voluntary motion. It is to the contraction in the two last kinds of fibres that the appearance called goose-skin, and the erection of the hair, under cold, or mental emotion, is owing.

We scarcely know, after the description we have given of the material entering into the formation of the true skin, and the manner in which it is combined to form this membrane, whether it is necessary to expatiate more upon the peculiar fitness of both for the object in view, — namely, to provide, as we said in the beginning, a soft, pliant, elastic, and yet resistant, covering for the body. It may be well to note, however, the closer arrangement of the fibres towards the outer surface, to insure a proper degree of resistance, and also to give a fit surface for the expansion of the sensitive and vascular layers,

which we will presently describe. Then, to protect these last-mentioned delicate layers from violence, we find the middle and under portion of the true skin less compact, gradually becoming porous, or net-like, as we descend; the meshes of the net so arranged as not only to be elastic themselves, but, to heighten this quality still further, filled with elastic bodies — little bags of fat. Thus is provided a cushion perfectly adapted to the purpose in view, of yielding upon any violent impulse from without, and preventing a compression of the outer and more delicate layer of the true skin, saving also the searf-skin from such bruising as might destroy it.

Another value, in the very open arrangement of the lower strata of the skin, is this: When we bend any substance of uniform elasticity and compressibility of structure, the portion towards the concave side is compressed and packed together, while that on the other is stretched, its pores opened, and there would be a layer just in the middle which would be neither compressed nor stretched. Now, if the skin were of uniform elasticity all through its thickness, this would be the case with it: In any crease or fold, the outer layers would be forcibly compressed, the circulation in the vessels hindered, and the delicate and highly sensitive papillæ found on this surface, and which we will presently describe, be subjected to a violence which would be hurtful to them, and painful to us. And much the same damage and pain, though not to such extent, would be caused by too great extension of these layers. By having the layer which supports the papilla and stratum of blood-vessels close and but slightly yielding, whilst that beneath can be readily compressed or stretched, the delicate parts are but little affected in any bending of the skin, and the compression and extension are confined almost entirely to the open, porous layer, so admirably constructed to endure it.

We before mentioned the increased thickness of the skin over certain parts, such as the palms of the hands, soles of the

feet, the shoulders, outside of the limbs, etc. This increase, though equally shared with the scarf-skin on the palms of the hands and the soles of the feet, is chiefly given on other parts by the under layer of the true skin.

**THE SENSITIVE LAYER.** - Upon the outer and denser layer of the true skin we find spread a delicate thin pink membrane, largely supplied with blood-vessels, to which it owes its color, and as largely with nerves, that endow it with a high degree of sensibility. The surface of this membrane, when examined under a microscope, is found to be covered with little eminences; or, rather, the whole membrane appears composed of these eminences, which are called papillæ. They vary much in size, but they are all similar in their formation.

These papillæ are planted upon a network of capillary or hair-sized blood-vessels, which supply them, and which themselves are supplied with blood by larger vessels, penetrating the true skin.

Having thus, we hope, made plain to the reader, as far as is necessary, the structure of the true skin, we go on to describe some other of its functions, besides those already explained.

The capillary layer may, at first sight, appear of little account in the great animal economy; yet it in truth plays a highly important part in the preservation of our health, and in insuring the safety and healthy action of the internal organs. The vessels entering into its structure are very small, —microscopic indeed; yet, when we consider the number of them, and the large surface over which they are distributed, viz., that of the whole body, we can conceive that their joint capacity is by no means trifling, and that a sudden filling or as sudden an emptying of them may be attended with powerful effects; and that any prolonged disturbance of their regular and healthy action must be soon followed by serious consequences to some other part of the system. More particularly, too, must this be the case when we find that these capillaries

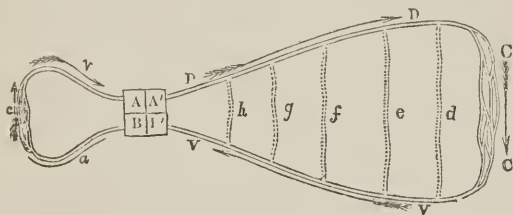
form an intermediate communication between the extremities of the veins and those of the arteries; and that, in fact, upon those little vessels, for the most part, do the larger ones depend: the arteries to discharge the blood they still retain in their extremities, — the veins to receive the blood, exhausted of its nutrient qualities, which they have to convey to the heart, to be again fitted for circulation.

It must be premised, if the reader is not already acquainted with the fact, that in warm-blooded animals the heart is a double organ, or, in fact, there are two hearts each containing two cavities: the one a receiving-chamber, as it were, to receive the blood from the veins, the other a discharging-engine, to force it out through the arteries. Now, to begin the circulation, the blood, of a bright red color, filled with nourishing particles and life-sustaining principles, starts from the ventricle or discharging-engine of the left side of the heart, or left heart, and is driven through the arteries over all parts of the system. Having arrived at the termination of the arteries, it deposits its nutrient principles, becomes unfitted for further use, and, besides, takes up all the refuse matter thrown off from the neighboring parts as useless to them.

This change taking place in the capillaries, — which, it must be understood, are found in great or less numbers in every part of the system, as well as in the skin, — the blood, now no longer of a florid red, but dark purple in color, must be returned to the heart, to be fitted again for circulation. This is done by the veins, through which, by a retrograde course, it arrives at the auricle or receiving-chamber of the *right* heart; thence it is immediately let into the ventricle or discharging-engine, to be forced through the lungs, where, under the influence of the atmospheric air, changes take place in it which render it again red in color, and fitted to nourish the body. It is then returned in this condition to the auricle or receiving-vessel of the left heart, and passing thence out of the ventricle



of the same heart whence we commenced our description of its round. Mr. Wilson, to whom we are already so much indebted, has illustrated all this very happily by the accompanying wood-cut.



In this, A A', B B', represent the heart. A is the left ventricle, from which we pictured the blood of a florid red color, starting to go its rounds through the system; D D represent the arteries through which it thus moves; C, the capillary vessels of the surface of the body, conducting the blood from the arteries to the veins; d, e, f, g, h, capillary vessels in the interior of the body, supplying with blood the various organs, — the brain, liver, stomach, kidneys, etc. A glance will now enable us to understand the importance of the part the external capillary system plays in the general circulation. If, for instance, it is interrupted, the blood is driven back to find some other channel through which it can complete its rounds. This, in general, is furnished most readily by the kidneys; and the experience of almost every one may have shown them how much more active these organs are during winter than in summer, — an activity particularly noticeable during any sudden spell of cold weather occurring in the midst of a warm season. If the interruption or obstruction is greater, e, the stomach, f, the liver, g, the spinal marrow, h, the brain, and finally even the heart itself, would become overloaded with blood. In a like manner, an overloaded condition of the superficial capillaries, whether by disease or artificially produced, would ex-

haust those of the other organs. We recently witnessed a case in which the most serious consequences were produced in a patient who, to relieve a slight cold, took a warm bath possibly a little over-heated. The capillaries of the skin were highly injected with blood, while there was scarcely enough left in the internal organs to carry on the purposes of life, and it was with great difficulty that the equilibrium was restored. The feeling of prostration, and even perfect fainting, sometimes produced by a hot foot-bath, is explained in the same manner. The capillaries of the lower extremities are crowded with blood, and there is not enough left in the brain to enable it to do its work. The obvious cure for this condition is to lay the patient at full length, so that the equilibrium in the circulation may be restored. The diagram also will show why the fever and other violent symptoms generally subside, and even sometimes disappear, upon the appearance of the eruption in scarlet fever, measles, etc.; and why, on the other hand, the sudden going in of these eruptions may be followed by very grave consequences; and also why many chronic eruptive diseases act as safety-valves to the system. It may give a hint, too, that cold bathing cannot be practised, as many think it can, with perfect impunity by every one. Of this we have had several instances, where serious consequences have followed both the too sudden adoption of the practice, and a persistence in it when the system was unfitted for it.

Blushing is a phenomenon which is caused by a disturbance of the circulation in the capillary system, the small arteries being for the time highly injected with blood; and the intense pallor attending violent mental emotion, or fainting, is just the reverse of this condition, the arteries being empty. The paleness after illness may be due to two causes: the most constant of these is a languor in the circulation; the blood is not driven actively through the capillary system, and to this is very often added an attenuated condition of the blood

itself, and a want of the proper amount of coloring matter in it. The purple hue and mottled appearance produced by cold is caused by the capillary arteries being emptied of their red blood, while the circulation in the capillary veins is sluggish, permitting them to retain their dark-colored fluid.

The agency of this system is also concerned in distributing over the surface, and indeed through all the organs at times, the yellow hue of jaundice. The bile, instead of being properly disposed of by the liver, remains in the circulation, and is deposited by the capillaries in the surrounding tissues, where it stays until the absorbing vessels remove it again.

**BLISTERING.** — With the description we have thus given of the capillary system of the skin, the object and effect of blistering can be readily understood. To attract away, so to speak, the blood that is filling the vessels of an internal inflamed organ which is not able to bear the inflammation, and the integrity of which is important to life, we set up an inflammation in the sensitive skin, which is able to bear it, and the integrity of a portion of which is comparatively unimportant, by the application of some irritating substance — ointment of Spanish flies, for example. The capillaries first become filled, and then permit the thinner colorless portion or serum of the blood to ooze through them, and form a cavity between the papillary layer and the epidermis, by pushing up the latter; — this is the blister. When the inflammation we wish to relieve is slight, or not of long standing, having drawn the blister, a mild, soothing ointment is applied to heal it up. If, however, the amount or duration of the internal inflammation is so great as not to be removed with such despatch, the blister is kept “open.” This is done by dressing it with some stimulating ointment, which will keep up the irritation of the blistered surface.

As the epidermis, even when it has been separated from it, forms the most soothing covering to the sensitive skin beneath,

in burns we disturb it as little as possible; but, for an obvious reason to the contrary, when we wish to keep a blister open, all the separated epidermis should be removed. It does not increase the suffering, if it is properly done, and the trouble is fully compensated for in the increased efficiency of the remedy. Sometimes the surface thus bared, instead of continuing to discharge serum as it should, becomes a deeper red, dry and very painful from over-irritation. In this condition, not only is its excellence as a blister very much lessened, but it adds to the excitement under which the general system is already laboring, and thus increases, instead of diminishes, the disease. To correct this, a thin light poultice of bread and milk should be applied, and renewed every four hours, until all the untoward symptoms disappear, when the ointment, with its strength diluted, may be again resorted to.

The activity of the absorbing vessels of the capillary system — those that remove the effete matter in their neighborhood, and carry it either to some point at which it can be thrown off, or be renovated and fitted again for use — has been taken advantage of to introduce medicines into the system, in cases where the use of the stomach for that purpose is inadmissible, — those of prolonged vomiting, for instance. As might be expected from its office as protector to those vessels, the epidermis must first be removed by a blister, and the medicine is then applied in such form as is best suited for absorption, viz., one of minute division, either fluid or powder.

**SENSIBILITY OF THE SKIN.** — We mentioned that in the formation of the papillæ nerves accompany the blood-vessels. To these is due the sensibility of the skin, a quality which supplies us with the sense of touch. This sensibility differs very much in different persons, and in different parts of the surface of the same person. With some, the sensibility may be so dull as to be considered the result of almost a paralysis or cessation in the function of the nerve; with others the ex-

altation of sensibility may arise to such a height as to become really a disease, and that a very distressing one. Constitutionally, some persons have a much higher sensibility of the skin than others, and what is not felt by one may be a very severe annoyance to another. We should, therefore, be careful how we accuse others of too little patience, because they are annoyed at impressions which affect us but slightly, or not at all. The old saying, that no one knows how the shoe pinches so well as he that wears it, is very applicable here. Children are more impressible than grown persons, as is instanced by the torture that many are put to by a bite or two from a mosquito or flea. Females are in general more impressible than males — those of a nervous temperament more than those of a bilious or of a lymphatic.

Besides this difference in the sensibility of individuals, there is a great difference in that of different parts of the surface of the same individual. Dr. Webber, of Leipsic, has illustrated this by an original and very simple experiment, viz., by touching the various parts of the surface with the two points of a compass, and trying how near the points could be approximated and still give two distinct sensations. On the tip of the finger they could be brought within a third of a line of each other; while on the middle of the arm or thigh they had to be separated to the distance of two and a half inches. On the point of the finger, the distance necessary was two lines; on the cheek, five; on the forehead, ten; middle of the breast, twenty. We have repeated these experiments, with a similar result, as far as regards the ratio of the sensibility of one part to another, but with different result as regards the actual distances mentioned; and this is as might be expected from what we have said above — that some persons are more sensitive than others. Another peculiarity we noticed, in testing the sensibility of the tips of the fingers, was that the tip of the ring-finger was more sensitive than that of the fore-finger,

though the latter is always used when we wish to exert our sense of touch, and is by some considered the peculiar organ of this sense. The truth, in all probability, is, that originally it does possess more sensibility, — certainly as much as the other fingers, — but it becomes dulled and obtuse by constant use, just as the part of the retina in the eye upon which the image of objects habitually strikes is not so sensitive as the neighboring parts; so that in feeble light we can catch the outline of an object very distinctly by looking at another object near it, whilst by direct vision we might not be able to see it at all. Dr. Webber noticed another phenomenon, which we are inclined to account for in the same manner. Putting both hands into the same vessel of warm water, the left felt the warmest, the habitual use of the other probably rendering its sensibility obtuse. He also remarked, what experience has often taught us, that putting a single finger into a vessel of warm water, we could bear it readily, while, on plunging the whole hand in, the pain was insupportable. In other words, an impression made upon a small surface may convey no sense of pain, whilst the same impression extended over a large one would be unbearable. This is too apparent and common-place to make it worthy of note, did we not find that a frequent disregard of it subjected many patients to suffering. Thus we have seen a poor invalid much pained by a foot-bath, the temperature of which the attendant has, upon the experience of a single finger, given honest assurance was not too high. Upon the same experience, too, we have seen a poultice applied, which, besides causing great suffering, materially affected the inflamed part for the worse. We may mention here, too, that the hands — in all probability, for the same reason that the right hand is more obtuse than the left — are better able to bear heat than any other part of the body, and therefore their power of endurance should never be taken as a criterion.

The sensibility of the skin, as with all other of our attri-

butes, may be increased by exercise; or, on the other hand, be repressed and dulled by disregard to its appeals, or by external influences upon the organs of touch. The blind furnish us with most common and frequent instances of the increase of sensibility. Besides the ability to read with rapidity letter-press from raised type, of a size that would prevent any one of unpractised fingers distinguishing the individuality of a single letter, and performing many other every-day acts requiring great nicety of tact, well-authenticated instances are on record of their being able to distinguish colors, simply from the different degree of smoothness given by one dye above another. The reverse of this is found in followers of mechanical arts, where rough or heated bodies are frequently handled. We have often seen a chemist remove, with his naked fingers, a vessel in which water was boiling; and blacksmiths handle freely pieces of iron heated to a degree that would prove highly painful to one unpractised.

DISEASE OF THE SENSIBILITY OF THE SKIN.—The sensibility of the skin, which in its healthy action ministers so much to our comfort, communicating to us so many pleasurable sensations, or warning us, by painful ones, of what may, if not remedied by timely care, harm us, is liable to diseased conditions, in which it may as greatly inflict upon us the most exquisite torture, or convey to us sensations entirely different from those we ought to receive from the source of impression.

The case related by Dr. Darwin, and made still more familiar by Wordsworth's ballad, of a young farmer, who, after the malediction of an old woman, never again felt warm, is one in which, though the disease did not originate in the skin, as indeed it seldom does, the sensitive layer was the chief seat of the painful emotion. This is also the condition in the cold stage of intermittent fever, while, as a reverse of this sensation of cold, in the collapsed stage of cholera, though the skin may feel icy to the stander-by, intense heat is felt in it by the



patient. We have also seen, both in this disease and in neuralgia, such a state of exalted sensibility, that the weight of a fly upon the surface would horribly increase the already intense agonies of the sufferer; and, in the last-mentioned disease, there is often, as in cholera, the sensation of great heat, whilst the skin is unaltered in appearance. Though it is very difficult to make comparative estimates of the amount of suffering of one kind with another, our observations lead us to believe that perverted sensibility of skin, causing a sensation of itching, is probably productive of the most intense agony. A patient of ours, whose powers of endurance had previously been well proved under a formidable surgical operation, remarked that her sufferings then were not to be compared with the tortures of an itching which affected her subsequently; and Mr. Wilson was told by a lady that the application of a sponge dipped in boiling water was perfect bliss, contrasted with the pungent suffering of the other infliction. This affection is, fortunately, not a very common one, except from accidental causes, generally operating upon the digestive organs, and it is generally met with in old people.

Besides these, the skin is sometimes affected with the sensation of insects crawling over it, or darting pains, smarting, tingling, etc. All these are generally dependent upon either some disease of the great nervous centre, the brain and spinal marrow, or of the digestive organs, though sometimes they are forerunners of some active disease of the skin itself.

It may be gathered readily from what we have said of the sensibility of the skin, both in health and in disease, that it affords a most powerful and efficient means of impressing the nervous centres, and as such it has been used both for good and for evil.

Dropping water on the forehead, from a height, was used as one of the tortures of the inquisition, — the irritation of the nerves of the skin by that means becoming so intense as to



finally affect the brain; and the criminal records of France exhibit a case where death was caused by first confining the victim, and then tickling the soles of the feet, — the effect being as in the former case, to produce such powerful excitement of the brain as to extinguish life. As a reverse of this, and for better purposes, the soothing influence of gentle frictions with the hand, or of combing the hair with slow and measured regularity, are remedies of by no means trifling efficiency in nervous excitement, frequently producing quiet and sleep, and doing away the necessity of opiates. Even the first-mentioned torture we found very serviceable in one case, as an indispensable assistant to our other means, and one without which they would have failed. An elderly lady, by mistake of the apothecary, took thirteen grains of a powerful narcotic. When the mishap was discovered, she was already deeply under the influence of the drug, and it was absolutely necessary that she should be awakened and kept awake until the antidote could act. To effect this seemed impossible, as with one of her age those acts of gentle violence generally resorted to, such as walking about, shaking or slapping the patient, were entirely out of the question. The above mentioned torture occurred to us, and it was soon put into operation, by suspending a lump of ice in a towel above the head. As the ice melted, the water fell, drop by drop, upon her forehead, while she lay beneath; and in a short time such an irritable state of mind and body was induced, that tendency to sleep was for a time entirely removed. The remedy had, however, to be renewed occasionally, but at intervals longer and longer, until all disposition to somnolence disappeared.

#### PERSPIRATORY GLANDS.

In the preceding pages we have confined ourselves to the description of those layers of membrane which constitute the

protecting envelope of all parts of the body. Besides its office of a covering, we have shown that the skin is endowed with a nervous system to which it owes its sensibility, and with a vascular system, which plays a very important part in the animal economy. In addition to these, there is within the skin, though not so essentially a part of it as the last, a series of organs, whose office is to form and convey to the surface, there to be thrown off and discharged, that fluid known as perspiration. Like the vessels of the skin, these organs are minute, microscopic, and individually insignificant. Yet, also, like those vessels, in their united action, their influence is of vital importance to the system at large; and any embarrassment to the healthy performance of their functions must be attended with greater or less damage to the general health.

The organ which forms the perspiration — which separates it from the blood — is a minute tube, coiled irregularly upon itself; in fact, a perfect tangle of microscopic tubing. In close contact with this tubing is a capillary blood-vessel, from the blood in which, by a vital action, the perspiration is separated, and passes into the tube. Between the tangled portion, or *gland*, as it is called, and the surface of the corium, the tube, now called the *duct*, is straight; but, when it enters the epidermis, it assumes a very regular cork-screw spiral, and in this form reaches the surface, where it discharges the perspiration by its mouth, called *the perspiratory pore*. The spiral arrangement of this tube, as it passes through the epidermis, before it was fully understood by means of the microscope, perplexed physiologists greatly. It was contended that, as the epidermis is impermeable to fluid, and retains so perfectly the serum of a blister, there surely could be no opening through it. Others, seeing the difficulty of this explanation, cleared the matter of their own minds very satisfactorily, by furnishing each duct with a little valve, by which it could shut itself up when it chose, and which, when closed against its will,

caused fever; a very useful theory, explaining two phenomena, but, like many others equally beautiful, not borne out by stubborn fact. The microscope has done away with all necessity for such valves, by exhibiting the true arrangement of the spiral, by which any pressure upon it, forcing the coils together, closes the aperture. Another reason, too, for the fluid in a blister not leaking out through the pores is, that when the scarf-skin is raised, it draws out from the straight part of the duct in the true skin a portion of its delicate lining, and this, it is evident, must act as a very efficient valve at the inner surface of the scarf-skin.

We will now call mathematics to our aid, to help us in illustrating the importance these perspiratory glands acquire from their numbers, and the amount of work they do in their united labors, using the calculation of Mr. Wilson for our purpose.

“To arrive at something like an estimate of the value of the perspiratory system in relation to the rest of the organism, I counted the perspiratory pores on the palm of the hand, and found 3528 in a square inch. Now, each of these pores being the aperture of a little tube about a quarter of an inch long, it follows, that in a square inch of skin on the palm of the hand there exists a length of tube equal to 882 inches or  $73\frac{1}{2}$  feet. Surely such an amount of *drainage* as seventy-three feet in every square inch of skin, assuming this to be the average for the whole body, is something wonderful; and the thought naturally intrudes itself, What if this *drainage* were obstructed,—could we need a stronger argument for enforcing the necessity of attention to the skin? On the pulps of the fingers, where the ridges of the sensitive layer of the true skin are somewhat finer than in the palm of the hand, the number of pores on a square inch a little exceeded that of the palm; and on the heel, where the ridges are coarser, the number of pores on the square inch was 2268, and the length of tube 567 inches, or 47 feet. To obtain an estimate of the

length of tube of the perspiratory system of the whole surface of the body, I think that 2800 might be taken as a fair average of the number of pores in the square inch, and 700, consequently, of the number of inches in length. Now, the number of square inches of surface in a man of ordinary height and bulk is 2500; the number of pores, therefore, 7,000,000, and the number of inches of perspiratory tube, 1,750,080; that is, 145,833 feet, or 48,600 yards, or nearly twenty-eight miles."

At ordinary temperatures, in health, the perspiration passes off in the form of vapor, called the insensible perspiration. Under excitement of exercise, elevated temperature, or mental emotion, and in certain conditions of disease, the quantity of fluid secreted by the perspiratory glands is so great as to appear upon the surface in the form of a watery fluid; this is the sensible perspiration. The uses of this perspiration are several, — some of a nature not to be understood by the reader readily, unless prepared by a knowledge of some of the more complicated processes constantly taking place within us, and with the departures from the proper type of these occurring in the disease. Its most obvious, and, for our every-day occasions, most practical use, is as a regulator to the temperature of our bodies, its effect being to reduce it. Chemistry teaches us that the vapor of water contains a very large portion of what is called *latent* heat; that is, heat the properties of which are not sensible, — heat which lies hidden, but which nevertheless has been employed in converting the water into vapor, and which is still contained in the vapor. Now, when we recall the fact of the existence of 7,000,000 of little steam-pipes, each discharging its quota of vapor, and this vapor containing its amount of latent heat, we can form some idea of the whole quantity of heat given off at every moment from the surface of the body. Having thus enabled the reader to

form some estimate of the power of this agency, we will now exhibit the necessity for its operation.

Man, as the lord of creation, — the intended ruler, under a higher power, of every portion of the globe, — must be fitted for all the exigencies to which any part of his dominions may subject him. A very obvious one of these is the ability to endure the temperature of the various zones in which he may have his habitation. At the pole this temperature is reduced at times to  $70^{\circ}$  below zero; at the tropics it attains an elevation of  $120^{\circ}$ . Within him there is, and must be, a heat-generating apparatus. The amount of heat generated by this apparatus we may regulate, to a certain degree, by the quantity and kind of fuel — the food we put into it; but, however we may attend to this means of regulation, our comfort, nay, even our safety itself, requires that there should be an overplus of heat at all times furnished to meet any sudden demand upon it; and, consequently, as this heat cannot be retained, it must be let off as fast as generated, unless it is wanted for immediate use. The perspiratory ducts then furnish the safety-valve or scape-pipes by which this heat is let off when not required. Thus, as we approach the poles, they become habitually closed more and more; as we approximate to the tropics, they are more and more opened, and act with more and more freedom, until, with some, they pour out almost continually, not only an insensible vapor, but a sensible fluid, keeping the surface at all times bedewed with moisture.

So much as a matter-of-fact explanation of the use of these small microscopie organs, — a use it will, by this time, be perceived, of the highest importance, and one which cannot cease, or even meet with any great interruption, without the most serious consequences ensuing. Our feelings of comfort or discomfort, under atmospheric influences, it will now be understood, are dependent rather upon the ability of the

perspiratory organs to form the fluid, and give it out with the heat it contains, than upon any particular elevation or depression of temperature; and the complaints of visitors from the tropics against the overpowering heat of even our northern summers may be explained. As long as the skin pours out the vapor or fluid of perspiration freely, a very large share of the effects of the elevated temperature is gotten rid of; but let the air be loaded with moisture, so as to check the evaporation from the surface, or let a damp wind, at a lower temperature, come up, so as to embarrass the action of the glands, and we at once suffer. The advantage that the inhabitants of the tropics have over us is, that though the heat may be greater, yet it is more equable; the system is not so often deranged by atmospheric changes, and the skin goes steadily on in its work of cooling it down.

The degree to which the human system can bear heat, under circumstances favorable to the free action of the perspiratory glands, may at first surprise the reader. Persons have, without great inconvenience, endured an artificial temperature of nearly  $400^{\circ}$ , the air being perfectly dry, so that the perspiration could be rapidly given off. The writer has experienced a temperature of  $200^{\circ}$ , without suffering in the slightest, whilst the air was free from moisture. Upon trying, however, a temperature of  $130^{\circ}$ , loaded with watery vapor, the pulse was greatly excited, the breathing became hurried and labored, and great general distress ensued — all of which symptoms were only lessened by the fortunate readiness of the skin to relieve the oppressed organs.

The value of a free perspiration as a symptom in acute febrile disease, and the desirability of producing it in certain cases, may also now be readily understood. By it the overheated surface and internal organs are cooled, the congested vessels relieved of their fulness, and its equilibrium restored to the circulation — conditions highly necessary to the return

of any diseased organ to its healthy state, and to the well-being of the general system.

Yet, a careful appreciation must be made of the cases in which it is desirable to induce perspiration, — a thing not always done by the uninitiated, — and much harm has been caused by efforts to induce it, under hope of relieving the invalid, when to do so is utterly impossible, and when, even could it be done, no benefit, but rather the reverse, would result. The only cases in which domestic treatment avails for this purpose are those of very recent colds, and rheumatic attacks. In these, if the remedy is applied in the very first stage, whilst the organ is only laboring from a congested state of its vessels, or before inflammatory disorganization has actually commenced, a free perspiration may cut the attack short, and save the patient from a graver disease. If, however, matters have gone a point beyond this, and true inflammation been established to such a degree as to produce vital changes in the natural and healthy condition of the part, perspiration, if it can be produced, which is seldom the case, will only cause a debility that must lessen the aptness of the part to recover. Not unoften, too, the means used — generally hot stimulants — tend directly to increase the undue excitement already existing.

To finish what we have to say upon this particular subject, we will mention that the most effective of domestic remedies, administered to produce perspiration, are hot drinks, simply, or containing some diffusible stimulant — lemonade, balm or sage tea, with the addition or not of gin or brandy. Tea made of thoroughwort, where delicacy of the stomach does not prevent, is probably the most efficient of this class of remedies — its excellence in the first stages of that distressing form of influenza, characterized by such intense pains in the limbs as to obtain for it, in the south, the name of Break-bone



Fever, having given to the herb throughout the same region the name of Boneset.

### THE OIL GLANDS.

There are still other organs pertaining to the skin which require our attention. These are the oil glands. They greatly resemble, in general structure, the perspiratory glands, but are rather more complicated. They are not so equally distributed over the surface as the last, for, while some parts, such as the palms of the hands, and soles of the feet, are entirely deficient in them, others are plentifully endowed with them — so much so as to give a very perceptible difference of aspect to the skin. They are found in greatest numbers over the nose and adjacent parts of the face, along the edge of the eyelids, within the ear, and wherever there is hair requiring the softening influence of the oil they secrete to keep its roots in a moist and pliant state.

The most obvious and common use they perform, in addition to that just mentioned, of ensuring a soft and pliant condition of the hair, is to protect the skin from the influence of fluids, with which the surface is liable to be bathed, and from atmospheric vicissitudes. On the edge of the eyelids they tend, by the repulsion which oil exerts upon watery fluid, to restrain the tears within their proper bounds. In the ear, besides contributing to keep the passage soft, and in a condition favorable to the transmission, in proper degree, of sound, the bitterness of the *cerumen*, or wax, they manufacture, repels small insects from entering.

As long as the skin goes on in a natural and healthy manner to perform its manifold work, and every part exerts its due degree of activity, the sebaceous or oil glands unobtrusively manufacture the fatty or oily matter, and discharge it upon the surface where it performs its use, and, having done so, is removed in washing. But all are not blessed with a skin



so perfect in its routine of duty, and with many it is often sluggish in the performance of its functions. With such the glands manufacture the oil, but instead of its being discharged together with the little bags in which it is first contained, these latter burst, give out their contents, and dry up; their contents harden into a cheesy consistence, and the whole is retained in the duct, or tube, by which it should have found exit at the surface of the skin. The tube becomes distended by fresh formation of sacks of oil, and its mouth collects smoke and dust, so as to form a black point, obtrusively visible upon the surface. These, of course, where the glands are numerous, become correspondingly so; and, in many instances, a most unsightly appearance of the skin is produced. Sometimes the skin immediately around these points becomes inflamed, and tumefies, forming a little red eminence, with a black point in its centre. There are few, if any, affections so really trifling in themselves, which are so unpleasant to the affected party, as these collections in the oil glands, and the inflammation that sometimes accompanies them. We call them trifling in themselves, for they seldom, if ever, are attended with any suffering; but they are really not so trifling, when viewed in the light of symptoms. They almost always indicate a sluggish state of the circulation of the skin, and an indolence in the performance of its other functions, besides that of supplying its surface with oil. It will be found, too, that the digestive organs participate in this indolence, and the whole intestinal canal is not inoften similarly slothful, causing constipation, colics, and much general uneasiness and discomfort. To these last organs we must, indeed, as a general thing, look for the original disease, and to them we must first give our attention in attempting to relieve the external affection. The stomach must first be spared from any over-taxation, by limiting the diet to simple, easily-digested and nutritious food. The bowels must be relieved from their torpor by gentle and simple

means, so that a free evacuation may be produced, at least once a day. For the latter purpose, we have, as a general thing, found nothing better than rhubarb : \* and, as the readiest way of taking it, the patient should chew a piece, of such size as experience teaches to be necessary, upon first getting up in the morning. It will be noticed, however, that we only speak generally ; particular idiosyncrasies may require a considerable modification of this treatment. This is as much as can be done to the general system safely, without further knowledge of the particulars of the case. As to the skin itself, partial or general bathing will be found beneficial in stimulating it to more vigorous action, the bath being as cold as the strength of the patient will bear, and reaction hastened by brisk friction with a *soft* towel. To remove the collection of sebaceous matter with its black point from the gland, we have found it useful to soap the part over with a soap sufficiently emollient not to chap or irritate the skin, before going to bed, and using care to cleanse it well away at the morning ablution. When the immediate neighborhood of the glands is inflamed, any efforts directed to the skin itself must be made very gently and carefully, for fear of increasing its inflamed state. Warm water will then prove more grateful than cold ; and as an application to soothe the irritation, and to hasten the removal of the sac, we have found bitter almond soap very serviceable.†

\* It may be well to mention in what rhubarb has advantage over other aperients, for the general purpose of evacuating the bowels. It is in its possessing a tonic property, which, while other aperients often used tend to weaken the bowels, so as to frequently require an increase of the dose to produce the necessary effect, enables it to increase the tone of the organs so as to act for themselves, and do away with the necessity of aid.

† In the course of this work, we would carefully avoid any expressions that might seem like praising an empirical nostrum. On the other hand, we feel it perfectly consistent with such a determination to men-

It is well known that when the distended glands are squeezed between the two finger-nails, the fatty matter within is forced out, preceded by the black point, and, being moulded by the aperture through which it issues, looks like a worm, and is, in fact believed to be one by many people. Strange as it may appear, though not a living animal itself, this fatty matter always contains a number of animaleules. They are elongated in shape, with a blunt head, which, as the animal lies in the tube, is directed inwards towards the gland. The largest yet seen by Mr. Wilson, whose paper on the subject was published in the Philosophical Transactions (1844), was the third of a line in length. The number in each gland varied from two to twenty, increasing with the torpor of the skin, or with the decaying powers of life of the individual. He discovered them in all stages of their existence, from the egg to the perfect animal. Mr. Wilson suggests, with great plausibility, that these little creatures are by no means useless, as, indeed, it might be presumptuous to say of any created thing; but that, in all probability, their purpose is, to remedy, to some degree, the inability of the skin to throw off effete matter, and, by breaking up the oil sacks, favor the discharge of their contents.

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## THE HAIR.

Besides the epidermis, there are two other structures formed by the skin, for much the same purpose, that of protecting it, but to a more partial extent and degree than the scarf-skin

tion any preparation which will serve our purpose, and which may be more convenient than, and equally efficacious with, a more formal and scientific looking prescription: as such we here mention, as useful in the inflammation of the oil glands, Almond Shaving Paste, made by Roussel, *taking care it is not rancid*. It should be smeared on at night, and removed with warm water in the morning.

does. These are the hair and the nails. They much resemble each other in their structure, which also closely allies them to the scarf-skin, being formed, like it, from microscopic cells, which, according to the age of their formation, and to their situation, become dried, flattened, split, etc., as may be necessary to fit them for the purpose required of them.

Every part of the surface produces hair, excepting the palms of the hands and soles of the feet; but the hairs of the different parts of the surface vary much in several particulars. Over the greater portion of the body they are short and fine, scarcely perceptible in some places. The eyebrows exhibit them of stronger growth and greater length, though still very limited in the latter quality. In the whiskers they commonly grow much longer, and still more so in the beard, whilst on the scalp, in their luxuriance and length of growth, they attain their maximum.

Hairs are formed by glands, situated either in the substance of the true skin, or in the fatty cushion beneath it. The gland consists of a little sac, at the bottom of which is an eminence, like those we described as forming a layer of the skin, and largely supplied, as those are, with nerves and capillary blood-vessels; from the contents of the latter the hair is manufactured. The hair, when formed, finds its way outward to the surface through a tube, like the ducts of the perspiratory and oil glands, lined with scarf-skin. Into these hair-ducts very frequently one, and sometimes two, ducts of the oil glands open, so as to give the root of the hair the advantage of the softening influence of the oil—a knowledge of which fact may serve as a hint that possibly less pomatum is needed to benefit the hair than is often supposed.

The process of manufacturing the hair, so to speak, is much like that by which the scarf-skin is formed. First a fluid is poured out by the papillæ from the blood contained in its capillary vessel. This fluid, gradually drying, forms first into

granules, then into cells, and these cells are aggregated together in the form of the hair. The hair thus produced is not, however, of uniform structure, but, on examination with the microscope, we find that the cells which constitute it present three different modifications. In the centre of the hair, which is less dense than the other parts, the cells are but little, if at all, altered; collected, as it were, comparatively loosely together, so as to form a pith, perfectly analogous to the pith of a feather. Immediately outside of this pith the cells are split so as to form fibres. These constitute the chief thickness of the hair, and give it its strength. Outside of this again is another layer of cells, but dried and flattened into little plates or scales, so that in the rough the hair has much similarity to a young twig of a tree; pith in the middle, fibres giving it strength outside of this, and a coating or bark outside of all.

The fact of the outer surface of the hair being formed of scales overlapping one another, showing, of course, a free edge directed outward towards the end of the hair, will explain why hair is smooth when rubbed in one direction,—that is, from root to point,—but rough in the other; and why, when we hold one between the finger and thumb, and make these glide upon it backwards and forwards in the direction of its length, the hair invariably moves root foremost. These scales, too, will give explanation of a process of great importance in the manufactures, that of *felting*, as it is termed. It consists, in brief, of the matting together of hair by means of the catching together of these scales. It is effected by means of a cat-gut string, which forcibly throws the hair repeatedly together, until a very intricate adhesion is effected. Of course, all hair will not answer, but only that which is furnished with the plates above described. Fur of the rabbit, beaver and muskrat, and the wool of sheep, are amongst the kinds of hair best suited for this purpose.

The average thickness of hair is  $\frac{1}{350}$  of an inch. Black hair is thicker than brown, and brown than blonde, as a general rule; though we have seen some specimens of very fine black hair, and of coarse sandy hair. It has been computed that of black hairs 147 grow upon a square inch of the scalp, 162 of chestnut, and 182 of blonde.

It will be remembered, we described the cells of the epidermis as containing more or less coloring matter, of tints differing in different individuals, causing the diversity of complexion. In the same way the cells forming the hair contain coloring matter, which gives the tint to the hair. This coloring matter, however, is not uniformly distributed through the substance of the hair, but is found chiefly in the fibrous portion; and, even in this, it varies in different parts, as if some of the cells were fully charged with the color, whilst others have little, if any, in them. To this unequal distribution much of the variety in the tints of the hair is owing. Thus an admixture of black cells with white ones gives a grayish hue; reddish cells with white ones, a sandy hue, etc.

Hair, when it attains a certain length, varying with its situation, falls off and is replaced by other, undergoing, in this respect, a process precisely analogous to the scales of the epidermis. In man this falling of the hair is continually going on, and not more at one time than at another; in other animals it occurs at stated periods. When, however, the hair is shaved at short intervals, this moult or dropping off ceases, and the hair becomes persistent; the artificial removal of it apparently doing away with the necessity for the natural.

The rapidity of the growth of the hair varies much in different persons. It has been calculated that the beard grows at the rate of one line and a half a week, or six inches and a half in a year. On the head the growth is evidently much more rapid; at least, under the influence of frequent cutting, if not by nature.

We mentioned that the duct or tube through which the hair finds its way to the surface of the skin is lined, like those of the perspiratory and oil glands, with scarf-skin. This, of course, is continually undergoing the process of exfoliation, or peeling off; and there being very many of these tubes, the quantity of scarf-skin thrown off cannot be trifling, and it collects around the roots of the hair. This is what is called dandruff, and is supposed by very many to be a species of disease, or, at least, something not precisely natural; but, understanding its nature, we must see that its formation in due quantities is healthy and proper. It can be only looked upon as a disease when it is given off too profusely, and only become reasonably objectionable when permitted to unduly accumulate.

We might here enter into a disquisition upon the use of hair; but such does not come within the scope of our intent, further than is necessary to impress the reader with the importance of injunctions laid down, or to enable him to appreciate the value of the directions we give.

On the head the use of the hair is most obvious, as a bad conductor of heat, to equalize the temperature of the brain. The eyebrows shed the perspiration from the forehead, which might otherwise enter the eyes. Just within the apertures of the nose and ears, it guards these from the ingress of insects and dust. Around the mouth, when left unshorn, it serves as guard, like the eyebrows, and also to sift and temper the air taken into the nose and mouth. The beard and whiskers tend to protect the delicate organs of voice, and, indeed, all the important and complicated apparatus of that region, from the influence of cold. This last-mentioned service is one that we are surprised has not been more insisted upon, particularly when affections of the organs mentioned are so rife amongst us. We hail, therefore, with gratification the increasing tendency to leave the hair on the face and throat unshaven. We



cannot but believe it was put there for an all-wise purpose, and that its removal, while certainly productive of no good, may both directly and indirectly be of harm. Against its remaining we have heard some smart speeches, but never one approach to a *reason* given. Fashion and Fogysm have, until now, declared the face must be shaven. Against this edict we oppose a general tendency, on principle, not to try to improve the creature as made by the Creator, and also the particular facts of several cases, which have left us no room to doubt that the removal of the hair from around the throat led immediately to severe affections of the tonsils, and of the upper part of the windpipe.

We would also suggest the probable injurious effects of shaving upon the organs in the neighborhood in two other ways. One from the daily irritation — not trifling, as most men know — produced over the large surface traversed by the razor. The other, from the increased formation of beard caused by the continued stimulus of clipping it. This increase has been estimated, by careful comparison between its growth in the shorn and in the unshorn, at fourfold; the supply of nutriment, therefore, to the three extra portions, must be furnished at the expense of some other organ, which, of course, has to suffer more or less on account of the privation.

Other uses have been attributed to the hair by physiologists, but they are too speculative, for the most part, to be of service to the reader. Its electric influence, for instance, has been much insisted upon by some, but without clear proof. It is, however, undeniable, that the removal of the hair has had great influence in relieving severe affections, more particularly those of the head — headache, vertigo, and tenderness of the scalp. This should make the hair the object of attention and care during any prolonged sickness, particularly if the symptoms point to any affection of the brain and its envelopes.



## THE NAILS.

Still more limited than the hair, but resembling it very much in composition, origin and function, as products and protectors of the true skin, are the nails. These are produced much as is the scarf-skin, except that, instead of the producing surface being raised into papillæ, it presents fine longitudinal folds, richly supplied with capillary vessels. From the surface of these the nail is formed, just as the scarf-skin is elsewhere; and as the latter dips down between the papillæ, so do the nails send off from their under surface thin plates which lie between, and are closely attached to the delicate folds. Nearer the root, the nail has not these folds, but simply presents ridges, underneath which the supply of capillaries is not so great; the part is consequently paler, and is crescentic in shape. Beyond this the root is imbedded between two folds of the true skin. The nail grows in two ways — by a deposit from the fine folds of the skin beneath, just mentioned, increasing it in thickness, and also by another at the root, which pushes the whole nail forward.

This interesting, yet delicate, process of forming the nail is very liable to disturbance, and more so by appreciable causes, accidents and the result of carelessness, than by any proneness of nature to intermit the regular performance of her work. Blows often interrupt the formation of the nail, destroying the vitality of the cells on the under surface, and thus detaching the nail partially, or even entirely, from the true skin. This requires the production of an entirely new nail, which, unless the violence has been sufficient to materially impair the nail-making power of the fine folds above described, is a precise reproduction of the old one. On the feet the nails are mostly affected by our carelessness in suffering the shoes to press upon them and impede their growth. In some instances, the

growth in length is impeded, and, the formation of nail still going on, it is forced back upon itself, and thickened sometimes to an incredible degree. At other times, pressure on the surface thins and spreads the nail, forcing it into the flesh; or even suppresses entirely its formation, leaving the toe unsupplied with the protection nature intended for it. Of this, however, more hereafter.

For the preservation of the nails little is necessary. Keep them from growing too long, by trimming them neatly from time to time; keep them from collections of dirt under the free edge, by using a nail-brush or a piece of soft wood — never a penknife, or anything else. Leave the edge of scarf-skin, near the root, uncut, but push it back, if necessary, with any smooth instrument adapted to the purpose. This is as much as you can do advantageously. Anything further, such as scraping, etc., gains but a small temporary advantage, at the risk of damaging the fine structure on which the excellence of the nail depends.

We need scarcely add here that the habit which some children have of biting the nails should be stopped without delay, as it invariably, if continued for any length of time, permanently deforms them. We have seen several ladies who would have been deeply thankful had their parents taken efficient means to break them of a habit which has entailed upon them thin, flattened and distorted nails, and stumpy finger-ends. Dipping the finger-ends into some bitter tincture will generally prevent children from putting them to the mouth; but if this fails, as it sometimes will, each finger-end ought to be encased in a stall until the propensity is eradicated.

## PRESERVATION OF THE HEALTH OF THE SKIN.

The countenance has been called the index of the mind ; — the skin might, with the same propriety, be called the index of the health. The most common observer must have noticed the difference between the complexion of the hearty, well-fed and vigorous, and that of the feeble, the half-starved, or the habitual valetudinarian. Nay, even in those that could not be classed amongst the last three, — in the inhabitants of a city, the operative in a close work-shop, the writer in an ill-lit counting-room, — we find a strong contrast to the clear skin, the free capillary circulation, and the rude plumpness, of a countryman, or one whose occupation takes him habitually into the fresh air. To the physician the aspect of the skin, so connected is it with the state of the general system, often before any other symptom is ascertained, tells of his patient's condition: its increasing pallor, the deepening of its purple hue, or its sodden, lifeless look, warning of further departure from health ; or, on the other hand, its richer tint, and its freer circulation, assuring him of more vigorous powers, and of a return to the well performance of their functions by the important internal organs.

To preserve, then, the good looks of the skin, it is absolutely necessary to preserve the good health of the body. The way to do this may vary in the details with different persons ; there are, however, principles of general application concerned, an exposition of which in full would scarcely benefit the reader. We purpose, nevertheless, laying down rules of practice, based upon these principles, as concisely as we can consistently with clearness. The particulars to which these rules apply are ventilation, diet, elothing, exereise, and bathing.

## VENTILATION.

In our account of the circulation of the blood, we mentioned that, having passed out from the arteries into the capillaries, it there deposited its nutritive particles, and, from being of a bright red color, it became of a bluish or purple hue; and that in this altered state it returned by the veins to the heart, whence it was sent into the lungs, to be fitted again for circulation, by changes which it underwent during its contact with the atmospheric air in the delicate tissues of those organs. To undergo this change, it is then necessary that there should be atmospheric air in the lungs; and, as a consequence, the better the air, the more thorough and effectual the change. Conversely, if the air is impure, if it does not contain its proper quantity of *oxygen gas*, — the important agent in this most necessary change, — the change will be imperfect, and the blood, of course, be but partially fitted to do its work in conveying life and health throughout the system. Now, strange as it may seem, though three-fourths, at least, of our readers are already fully aware of what we have been telling them, we are all habitually careless about supplying our lungs with the needed quantity of atmospheric air, and about the purity and excellence of what we do supply them with. They are silent and uncomplaining: they cannot taste the impurities that are taken into them; they raise no rebellion, as the stomach does; and unless the violence done to them, either in depriving them of a proper quantity, or in giving them a bad quality, be so great as to immediately distress the whole system, the mischief is either unnoticed or attributed to some other source, and it goes on exerting its influence, until possibly its effects are beyond remedy. Nay, even where all this has been clearly stated, we have been astonished at the apathy shown by persons in remedying the closeness of their apartments, and securing to themselves a free and uninterrupted

supply of fresh air. The remonstrances of the physician are attributed to his "peculiar notions;" the patient feels no inconvenience, because the system is already tamed down to insensibility by the impure blood circulating in the brain; and the conscience, if it have anything to do in the case, comforts itself with the assertion that the window has been opened once during the day, and possibly has remained open a whole hour. We are also often met with the remark that all this about ventilation is a new-fangled theory; that our forefathers did without it, and there is no reason why we cannot. We cannot go back to our forefathers just here; but, to make the argument good, it must be shown, in the first place, that they actually did without it, and that they were well off for so doing. In one case, where we found a young family evidently suffering from the want of fresh air in the sleeping-room, having in vain urged the true state of the case upon the mother, we suggested that possibly the cause of so much sickness might be dirty food. This was at once indignantly met with an exclamation at the injustice of such a suspicion. We answered that the stomach could bear impure food much better than the delicate lungs could, and yet it must be evident that these were only supplied with such as had already been previously used by several others. This strong yet perfectly true statement of the case had the effect which all our arguments had not, and the sequel fully confirmed our opinion as to the cause of the sickness.

Now, let it be borne in mind that each person requires for the purpose of life—in round numbers—one cubic foot of air a minute. This quantity must not be stinted, and it must be a "good article." Directly it fails in either of these particulars, the blood is but imperfectly restored to that condition which suits it to do its work of renovation throughout the system. The most immediate influence of this is felt upon the brain, which becomes sluggish and inactive, dulling the sensi-

bilities, producing languor and sleepiness, and rendering the mind obtuse ; the heart (lacking its accustomed stimulus, both local, from the quality of the blood received into it, and general, from the imperfect supply of nervous power from the brain) does its work lazily, lessening the activity and thoroughness of the circulation ; the distant organs next feel the trouble, and suffer, as we may now see, in two ways : from the lessened force of the heart failing to send them their full supply of blood, and also from the bad quality of what they get. Thus, no part of the system is free from the influences of an imperfect supply of atmospherie air, and a bloodless, tallowy-looking skin is but a natural accompaniment to the graver disturbances within.

Now, it may be asked, How is this supply of air to be uninterruptedly maintained ? The size of our city houses presents, at first sight, a difficulty ; but this could be entirely surmounted, if they were built with the necessities of the case fully before the architect. The smallest bedroom might receive its full and regular supply, and be made just as healthy as the largest. An aperture at the top of the room leading into a flue would readily conduct off the foul air, and this is an excellent arrangement for spring and fall weather, when artificial heat is not required, yet when it is too cool to open a window. For winter it would not answer, as the heated air would be too rapidly removed, and only partially warm the room, in its passage from the point at which it enters (if coming from the register of a furnace), or at which it receives its heat (the neighborhood of the stove or fireplace), to the aperture above. When artificial heat is used, ventilation, for the above reason, must be effected from the lower part of the room. This may seem at first strange, for it is certainly a contradiction to the generally received notions that the foul and heated air should ascend together, and find exit at the top ; but the numerous experiments we have witnessed have convinced us,

not only that this is the best means of ventilation, but that it has another very important end, namely, the equalization of the temperature of the room in its several horizontal strata. In one experiment the room was eleven feet in height. A thermometer at the ceiling stood at  $105^{\circ}$ ; midway up the wall at  $75^{\circ}$ , on the floor at  $55^{\circ}$ . There was thus a difference of  $20^{\circ}$  between the temperature of the head and that of the feet of a person standing erect — a difference not only unfavorable in itself, but doubly detrimental to comfort and health, by directly reversing the proper relations of the temperature desirable for these two extremities. By opening a valve at the lower part of the room thus heated, the lower and cooler layer of air soon passed out, and was replaced by the warmer strata from above, until the whole body of air was not only equalized in temperature, but was renewed and replaced by successive additions of warm fresh air from above.

To produce this wholesome effect, then, in building a house, each room should be supplied with a flue, having an aperture, to be closed at pleasure, both above and near the floor. When artificial heat is used, the latter should be opened and the other closed. When no artificial heat is used, the upper one should be kept open. This flue may be made of tin, and carried up alongside of the chimney-stack; but if this should be thought to increase the breadth of the chimney-breast too much, it may in most cases be carried up between the studs of the partition, and terminate with a ventilator\* on the roof of

\* Many ventilators have been contrived, some patented; none exhibit a new principle or design, and we doubt whether, in their strong resemblance, amounting almost to identity, to those devised in France one hundred years ago, the patent would hold. The one which has satisfied us most, taking everything into consideration, is the result of a series of experiments, conducted by Dr. Morrill Wyman, of Cambridge, under the auspices of the American Academy of Arts and Sciences. It goes by the name of "The Academy's Ventilator," and is not patented.

the house. In fact, any ingenious builder can surmount all the difficulties, and, without a great expense, or any deformity or interference with the other arrangements of the house. Where the house is already built, and heated by a furnace, if the fireplaces are not used, the chimney itself may be converted into a ventilating flue, by simply inserting a fire-board having a sliding pannel in the lower part. When a room possesses no other means of ventilation, the window furthest from the bed (so as to avoid the effects of too direct a draft) might, even in cold weather, be left open, to the extent of an inch or two, and any depression of temperature thus caused remedied by an additional blanket. The chances of taking cold from this are very small; the injury of neglecting it, certain. Whatever may be its contrivances for ventilation, every sleeping apartment should be thrown freely open and aired, for an hour at least, every day; and the sunlight, which is a very efficient decomposer of impure and noxious emanations, also freely admitted. During this time the bed should remain unmade, and the bed-clothes spread over chairs, to receive the purifying influences.

In the apartments used during the day, there is generally so much going out and in, that the door affords a good deal of ventilation; but it is highly desirable that this should not be depended upon, but the other means we have suggested be also taken, to prevent the chances of failure. It must be evident, however, that, if we depend upon the air coming in at the door for the supply for our lungs, this air must be good; and this brings us to a point upon which many deceive themselves. In houses heated by hall-stoves, or by Perkins' hot-water apparatus, on complaining of the closeness of the air, we have been told that the door of the room has been open all day. True; but why should the air outside the door, in the hall, or on the stairs, be any better than that in the room? It is never renewed, except when the front door is accidentally



opened; and, indeed, never then, if the house has an inner door. Calculate the cubic contents of the whole house, and, unless it is above the average size of a city house, it will be found that its tenants can each have their cubic foot a minute but for a very few hours, and after that they must breathe each other's.

We have mentioned incidentally methods of warming houses. This is an important subject, and it comes here properly within our scope to say something more upon it. We will do this as briefly as possible, and without theorizing.

There are four methods in common use amongst us: by open fires in fireplaces or in Franklin stoves; by close stoves; by furnaces; and of late by steam conducted through the house in iron tubes. This latter does not minister in the slightest degree to the introduction of fresh air, and is, therefore, as well as for other reasons, wholly unfitted for private dwelling houses, though it is admirably adapted to hotels, spacious workshops, and places of business, where frequent opening of doors renews the air sufficiently. The fire can be placed in a distant part of the building provided for it, thus insuring immunity from danger, while the tubes may be conducted about to almost any amount and extent. As an instance, in the new piano factory of Messrs. Chickering, in Boston, the length of the pipes there used is eleven miles.

Close stoves are most economical in point of consumption of fuel, as they present a large radiating surface, and, when properly managed, but little heat is lost. The great objection to them is that they do not renew the air of the room. They require but little for themselves, and do not, therefore, draw much into the room, even if means of ingress are provided. With such means, however, and with a ventilating flue as above described, the disadvantages attending them are almost entirely removed, and they may be made to serve very well, more particularly as the amount of heat given out by

them can be perfectly controlled by proper management, and they are not liable to accidents.

An open fire in a fireplace is, undoubtedly, the most cheerful and pleasant method of warming a room, and of itself it renews the air by creating a great draught up the chimney; but it is very wasteful of fuel, presenting an important objection to its use where this article is expensive. The Franklin stove was devised in France, a hundred years ago, to lessen this wastefulness, which it does somewhat, by being set out into the room, thus exposing a larger surface for radiation, and, also, by conducting the smoke through a flue down and up the back of the fire-chamber, gaining a little more heat from it during its passage. The saving thus effected is not, however, great enough to materially lessen the prime objection to the expense. Another disadvantage in a cold climate in the sole use of a fireplace, or even of a close stove (though a less one with the latter), is, that upon opening the door of a room, ingress is given at once to a large body of cold air from passage-ways. This, of course, may be remedied by a hall stove, or furnace.

Of all the means of warming a house, we consider a *proper* furnace the most correct in principle. What is it we want? A constant supply of fresh air heated to a proper temperature, like Mrs. Gamp's ale, "brought reg'lar, and draw'd mild." A good furnace, correctly managed, gives this admirably. There may be defects in particular furnaces, and mistakes in the management of others, annulling all their excellence, but the principle, we repeat, is perfectly correct, and the failure is a remediable fault. They first heat a body of *fresh* air, and then introduce it into the apartment where it is wanted, and this introduction is continuously successive. The temperature of this air, and the amount of it, too, may both be perfectly regulated and controlled — all we require for health and for comfort.

Comparatively few know how to use furnaces; hence the objections to them. A most common error is in having them too small for the house they are to heat; the consequence is, they must be driven to the utmost, and kept very hot. The air is thus dried and burned, and comes into the room at a temperature far too high; besides which, the expenditure of fuel is very wasteful. The true plan is to have a large furnace, and correspondingly large air-chamber around it, supply-box leading to it, and register-pipes leading from it. The fire-chamber then, presenting a large radiating surface, need not be heated to a great degree, and, instead of introducing to the house a small body of very hot air, a large body of mildly-heated air is brought in. We found, by actual experiment, that the air from some furnaces ranged as high as one hundred and seventy degrees, from many as high as one hundred and fifty degrees, whereas it ought not to be above one hundred and ten degrees at furthest, and might be even much lower. Another necessity is that of a plentiful supply of water, to preserve a proper amount of moisture in the air introduced. This can only be insured by a pan of proper size in the air-chamber, kept constantly full by means of a float-ball, self-supplying. Taking these precautions, no one need be anxious on the subject of health, comfort, or convenience, in using a furnace.

#### DIET.

Next to inattention to supplying the system with a sufficiency of fresh air, faults in diet are amongst the most frequent sources of impairment of health. These faults are both of quantity and kind. The excess in the quantity of food we habitually take over what is really necessary for all the purposes of life, could scarcely be realized without actual experiment. Judging by this means, both as tried personally and on others, we should estimate it at fully one half, for an

average. It would, of course, be impossible, without trial, to give even an approximated estimate of the absolute quantity required for any grown individual; much less could we do so as a rule for general application. As, however, a safe guide for every one, we would suggest that the meal be finished before satiety is arrived at; that we should always rise from the table feeling not only that we could eat a little more, but that a little more would be very agreeable. This may be at first a severe tax, but custom will soon make it easy, and the effects of such forbearance will, we feel confident, fully repay the experimenter, in the freedom that it will insure him from many of the discomforts that now so often habitually follow our meals, particularly the mid-day one.

As to kind of food, — no question in hygiene has been so vexed, and upon no other point have the dicta of physicians been put so utterly at naught by the self-will of their patients, and this not only with impunity, but with a perfect refutation of those dicta. The reason of this seems to be, not in any fault in the theories that science has broached upon the subject, — not in the principles laid down, — but in a too narrow and exclusive application of the theory or principle. Chemistry shows that a certain article contains such a percentage of nutritious particles of a particular kind, and therefore it is admirably calculated for food in certain cases. One of these cases occurs, and the article is prescribed, tried, and found indigestible; — lies heavy in the stomach, — produces distress, — of course, affords no nourishment. Now, the analysis was correct, — the theory all right, — but the peculiarity of that individual's previous habits, or some idiosyncrasy, has been left entirely out of the calculation, and comes in to confound the opinion of the physician, and, apparently, the science on which the prescription was based. We have seen cases in which the stomach would dispose of sole-leather as readily as delicate fish, — where it would digest lobster-

sauce, and permit veal-broth to ferment in it. We cannot, therefore, do more than lay down the most general rules for diet, leaving the individual to make a more particular application of them himself.

The food should be nutritious; a self-evident proposition, yet one much disregarded, especially by women. It should not be of unnecessary bulk; the stomach should not be taxed with admitting into it a large quantity of material, from which it can only extract a small quantity of what is truly useful. In cases of enfeebled powers this is a highly necessary caution. We have often seen a convalescent much troubled by a bowl of delicate broth, when a half-dozen mouthfuls of beef-steak, containing twice the quantity of nourishment, could be readily assimilated by the stomach. In the first case, the organ was distended, embarrassed, the gastric juice diluted; in the other, this fluid was in its full strength, and the organ could give its undivided powers to the digestion of the small mass within it. There should not be too great a variety at one time introduced into the stomach. We do not care, just now, to reason upon this point; but we know it is a fact that even where each article is individually very digestible, a mixture of a great number of such is not so much so. And under this head we give, as another rule, that an article, even though the most wholesome, should not be adhered to too long;—not only does it cloy the palate, but, apparently, through some sympathy between the taste and digestion, it ceases to be digestible. This should be particularly attended to in cases of sickness, where the bill of fare is never very large, and where the articles of diet are not remarkable for the distinctiveness of their flavor—sago, arrowroot, &c. We consider this sameness of diet a great fault in boarding-schools. With boys, who have the advantage of rude exercise to assist their digestive powers, it is not so much matter; but with girls, kept under the rule of “propriety,” we have reason to think

that much harm is caused by it. The resort of these victims of an unvarying diet to highly-flavored articles, and the consumption of whole lemons and pickled cucumbers, of a size dangerous to others, by delicate-looking girls, is only a compliance with a demand of nature.

To specify particular kinds of food to be avoided: fats and greasy compounds, particularly if the grease has been converted by cooking into empyreumatic oil, as is frequently the case in roasting turkeys, in pastry, etc., tax the stomach severely to digest them. It oftenest fails to do so; and even if it succeed, the product is not of sufficient value as a nutriment. Skin and stones of fruit are wholly indigestible. Peas, beans, and cabbage, produce, with most persons, flatulence. Further than this we cannot go; and, as it is, we should not be surprised to hear from one that he eats mince-pies and doughnuts with the greatest comfort; from another, that he is always better, the larger the quantity of fruit that he eats, skins and all; or, from a third, that he looks upon cabbage as the most digestible article of his bill of fare. As we said above, we only give general principles, leaving the application of them to each individual.

The model diet for those in health may be found in that used by persons training for contests of muscular strength and endurance. It consists of the lean parts of beef or mutton, roasted or broiled, so as to preserve all the animal juice; farinaceous vegetables — potatoes, baked or boiled, so as to be mealy; bread, a small allowance of dry wine, and sometimes malt; tea and coffee comparatively sparingly. The meals are taken at stated times, and great care is taken that too much be not eaten. This, of course, we do not suppose could be imitated very rigidly; but, as we have said, it may be used as a model. The solid animal fibre in our diet supplies our systems with a similar material, and gives our solids firmness and tenacity, whilst animal juices alone rather tend to the

increase of fluids, blood, etc., within us. It is, therefore, very necessary that a proper quantity of the former should enter into our diet. The effect of a disregard of this precaution was exhibited to us lately, in a young lady, whose periodical loss of blood became very alarming from its quantity, yet without producing any marked change in her pulse or color. An explanation was sought, and we could find it in nothing else than the fact of her living habitually upon the choice articles of a French bill of fare ; thus manufacturing a large supply of blood, of which the hemorrhage was only an effort of nature to get rid. No medicine was given, but beef-steak and mutton-chop were substituted for fricassees, stews and sauces, and a most complete relief gave proof of the correctness of our explanation.

The difficulty, however, of the management of diet, we have found to be not so much in the attainment of knowledge of what is to be eaten and what is to be avoided, as in the want of ability to check the natural propensities, and subjugate them to that knowledge. The palate and stomach are our worst tyrants, and either overcome us by direct force, or by perverting our judgment ; and though the weakness of the drunkard is more striking, that of the gourmand is just as great, and more common. We have seen persons affected with most distressing diseases of the skin, who had already had sufficient relief to encourage them in the course of diet they had adopted, relapse into their former habits, in sheer inability to resist temptation ; and in a case of obesity in a young female, which made her life one of continual mortification, perseverance in a course of abstinence could be maintained but for a few weeks. In a consultation with Dr. James Jackson, we were very much impressed with the advice he gave our patient, whom it was necessary to restrict in his diet, both as to quantity and kind ; it was, that he should, before beginning his meal, put upon his plate all that was to constitute

that meal. In this way he could coolly estimate the quantity, and see that it was as much as he ought to have; and he would be fortified against the temptation to take a little more, or something else, which might prove too strong for him if he could find excuse for breaking his resolution. As an illustration of the difficulty we have of realizing our abuses of diet, we offer the following: A splendid specimen of a man, sixty years of age, six feet in height, of florid complexion, and with a full head of white hair, in a confidential conversation with his nephew, a friend of ours, disclosed that he had sad foreboding that his system was breaking down. His appetite was not always good, he had strange feelings of oppression, slept badly, had lost his activity and genial animation. His nephew, suspecting the trouble, asked if he did not eat too much. "O, it could not possibly be that — very moderate. At breakfast, not much appetite, two cups of coffee, two hot rolls, a little salmon, and an egg." "Any lunch?" "Next to nothing — crackers, couple of sardines, a slice of cheese, with a pint of porter." "Moderate dinner?" "Very — never more than two dishes — that is, of solids — did n't count soups, and light things; not much dessert — liked fruit — never more than three glasses of wine, unless with a friend." "Any tea?" "Two cups, toast, grated cheese, or chipped beef." "That the last meal?" "O, no, at ten require a little something — stewed oysters, terrapins, or dinner's turkey warmed up, pint of ale, etc." Of course it would have been useless to have *reasoned* with him; — our friend pursued a more decisive way. Exacting a promise to follow his directions for twenty-four hours, he told him to procure an earthen crock with a cover, and for everything he ate and drank for one day, to put a precise duplicate of it into the crock, and not to look at it until the following morning. The consequences may be imagined, though his astonishment hardly can. Conviction was overwhelming, and a reformation at



once commenced, which soon relieved him of all unpleasant forebodings.

We must, under this head, as the most proper one, again revert to a point previously incidentally mentioned — the necessity of keeping the bowels free. We are furnished by nature with a most perfect apparatus for every department of our economy, supplying us with what is necessary for our momentary uses ; and also — mark ! — for getting rid of what we have done with. This latter provision is as necessary as the former, and if we neglect using it, our fault brings its own punishment ; for no poisons are so certain, no enemy to our health so insidious, as our own excretions — as that which was once part of us, or has served us, but is now no longer wanted — the air we have breathed, the perspiration we have exhaled, the gastric fluids, the bile, the intestinal secretions, and the refuse of our food. Yet, plausible as this may appear, and as incontrovertible as it will be found upon inquiry, there is no point of hygiene so difficult to impress upon the mass ; and, even if the truth of it is allowed, a most strange and unaccountable apathy is exhibited in acting upon it, more particularly by females. We have seen many cases of the collection of oily matter in the glands of the face, marked by the little black dots, described when speaking of the oil glands ; we have seen many cases of this, giving the patients any amount of annoyance ; and though they would use (of course, ineffectually) bottle after bottle of lotion, and seek quack after quack for relief, yet they could not be induced, by any means, to obey nature in her plainest indications — an obedience which, of itself, often cures the affection. Another specimen of the effects of this carelessness in permitting habitual constipation of the bowels is seen in a dirty brown hue of the skin, caused by a reabsorption of the contents of the bowels and their coloring matter into the system. The very idea of it is repulsive enough, one would think. These complexions are generally

attributed by the patient to some particular fit of sickness, or to some new occupation ; but, on sifting the symptoms, the cause becomes apparent, and the effects of a few brisk purgations often excite wonder.

Twenty-four hours should never pass without a *free evacuation* of the bowels. We lay stress upon these words, because many content themselves with simply having the bowels *open*. In the larger number of cases, habitual regularity in making the effort, if faithfully persevered in, will insure success. If assistance is needed, it should be as simple and gentle as possible ; and for this we refer to what we have said about the virtues of rhubarb, and we will add the following prescription, which may be used safely at the time, and without fear of hurtful secondary effects. Take of Rufus' Pill and Powdered Rhubarb each a drachm. Make it into twenty-four pills. Dose, from one to three, according to the necessities of the case.

### CLOTHING.

As a means of protection against external influences of temperature, clothing has, under different circumstances, four ends to meet : to save the heat generated within us, and prevent its waste ; to increase this heat ; to guard us against sudden changes, and, where the external temperature is elevated, to protect us against it. Much has been written upon the comparative excellence of various materials in answering these purposes, and we believe more importance in the abstract has been attached to these differences than is borne out by actual practice. To retain warmth, the covering should be a bad conductor of heat. Air is a bad conductor, and all soft, spongy tissues, by retaining air in their meshes, are bad conductors, and, therefore, suitable for the preservation of our animal heat. Furs, woollens, cotton wool, down, etc., are examples of such substances ; and, so far as this particular end is concerned, nothing more need be said. There are, however,

incidental peculiarities, which may make the employment of one material preferable to that of another. Wool is the most porous of the materials used for our under elothings, and the best for winter wear; it is, however, rough, and with some produces irritation of the surface, so much so as to entirely preelude its eontaet with the skin. This may be prevented, and yet all advantages retained, by wearing a light eotton garment under it. In the climate of New England, we should advise that under eloths of flannel — at least for the chest and abdomen — be used during the whole of the eold weather, — say from November to June. We state this plainly, without qualification; beecause, though we do find many going without it, and, in their own opinion, doing so with impunity, yet our observation of these very instanees has made us resolve them either into rare exeptions to a general rule, or into eases confirming our broad opinion.

Next to woollen clothes, Canton or eotton flannel — that is, thick eotton, with a nap upon one side — is the best material for warmth; but it has the objection that, after use, the nap is worn off, and the exeellenee lost.

The fibre of linen is close; it therefore is a good eonduetor of heat, and badly fitted, of eourse, for purposes of warmth; and even in warm weather, the other materials, partieularly eotton, have an advantage over it, in their not being elogged by the perspiration, as it is, but still keeping their meshes open and free.

Silk has been much praised for under garments, and does, in truth, retain the warmth of the body, and even, like woollen, excite it; we have not, however, been able to assure ourselves of its preëminent exeellenee in rheumatism, attributed to it by many writers, and its eostliness prevents its very general use.

In this brief notice of these artieles, we feel that we have said enough touching their fitness for retaining and exciting

warmth. We leave it to the common sense of the reader to make a more particular application of our remarks, whilst we pass on to more important considerations.

The first of these is the amount of clothing we ought to use. This, of course, must vary with the external temperature, and also with the particular temperament of the individual, some habitually requiring greater warmth than others. The ability of our system to resist the impression of cold varies at different periods of our life. In infancy its power to do this is comparatively small, as has been proved by multiplied experiments upon children, and upon the young of other animals. The temperature of an infant at birth is about  $96^{\circ}$ , — for the first few weeks,  $98^{\circ}$ ; but a very small abstraction of heat from the surrounding atmosphere will depress this temperature much more than it would that of an adult, and this liability to depression of temperature extends greatly into the years of childhood. With this peculiarity, we cannot be surprised at the results of careful observations, which show that the mortality of children — amounting, on this side of the Atlantic, to nearly one fourth for the first year — is twice as great in winter as in summer; and of this, one fifth of the deaths are from inflammation of the lungs.\* This should point out the absurdity of the attempts made by parents to harden children, by sending them out to endure our winter frosts, with bare legs and arms, as caricature Highlanders, or infant Scythians, for-

\* These numbers are approximated results, from observations made in several localities. In the southernmost states, the difference between the mortality in winter and summer would, of course, lessen; as also would the proportion of deaths from lung disease. On the other hand, the influence of cold on children is frequently productive of brain disease; or, from the delicate structure of that organ, what may have commenced as an inflammation of the lungs, terminates in convulsions, or in effusion of water on the brain; so that, on the whole, the calculation may be depended upon as clearly within bounds.

getting that their home is not a shealing, nor their food bears' blubber. In saying this, we wish it to be distinctly understood that we are no advocate for keeping even the youngest infants constantly housed; on the contrary, we believe that, after the first month, not a day should pass — unless as an exception — without their inhaling the pure out-door air, during some portion of it. This may be done with perfect safety, as we know from many observations, if the infant be properly wrapped up; and we consider that few measures tend more surely than it to harden the constitution.

Our ability to resist cold varies also with the seasons. In winter a kind provision of nature increases it to meet the demands upon it; and, consequently, we find that frequently a change of clothing, in itself very incommensurate with the difference of temperature, suffices to make us comfortable. It also varies at different times in the twenty-four hours. Every one must have noticed a frequent chilliness just after dinner, when digestion is going on, concentrating the circulation about the organs engaged in this work. This should warn us not to run the risk of interfering with it, by unnecessarily exposing ourselves at that time to any decrease of temperature. At night, also, when the vital powers are enfeebled by the demands of the day, we require additional protection against the cold; and the poking of the fire, and adding a fresh log at the end of a winter's evening, is not so much from the air being colder, as from our really having less heat in ourselves.

And this brings us very naturally to the consideration of the question of what should be the habitual temperature of our houses; or, in seeking comfort and health in protecting ourselves from depressed temperature, how much should we depend upon our clothing, and how much upon the artificial heat of our houses. This we think a very important consideration, and one which has received too little attention. We boast much of our modern improvements, — double sashes,

tight doors, hall stoves, furnaces, etc., — and wonder how our forefathers lived as such hale and hearty specimens of the human race, and to such an age, without these contrivances ; a wonder which is much increased, when, upon piling their old-fashioned chimney-places with fuel, we cannot get a temperature over  $45^{\circ}$  or  $50^{\circ}$ . We do not wish to depreciate modern improvements, either as means of comfort or of health ; nor do we believe all that is told us of the immunities of our forefathers from disease. We know that the gravestone covers many that might, had they been born later, have lived to be grandfathers and grandmothers, but who, for the want of some of our modern inventions, went down beardless, or in the blush of “sweet seventeen,” to their narrow bed. But we think that these inventions have too much taken the place of more wholesome means of attaining the same end ; and that, if we protected the external surface of the body by thicker clothing, and kept the temperature of our houses lower, — nearer that of the external air, so as to make the difference between indoor and out-door less, — that if the air introduced into our lungs were less rarefied, — that if it contained in the same quantity more oxygen, exerted a more genially tonic influence upon the fine membrane of our lungs, now so disposed to inflammation and hemorrhages, — we should fare much better. Take the first point alone — the difference of temperature between in-door and out ; this is often  $70^{\circ}$  for the first ;  $30^{\circ}$ , and even much lower, for the last ; the difference  $40^{\circ}$ , and more. How do we meet this immense disparity ? Mostly by an overcoat or cloak : surely very incommensurate to the object in view — a compensation for a loss of forty degrees of temperature. Now, either when outside we are too thinly clad, or inside we were heated too much. To refer again to our forefathers, how did they manage it ? Look at the portrait of Sir Thomas More in his study ; Erasmus at his desk ; both clad in fur wrappers. Or, still nearer, examine the long, thick

waistcoats of our great-grandfathers; back and front of the same warm material, supplied with sleeves, and the skirts reaching the knees; over this a still more voluminous coat, or an ample dressing-gown. This, we think, will fully explain their capacious chimney-places; cheerful, yet not generous of heat; and their impunity from the untempered ventilation of loose window-sashes.

Another important consideration, in selecting materials for our dress, is, that they should be of such a nature that they can be readily cleansed from the exhalations from our person. It must be remembered that, in the coldest winter, as well as in the warmest summer, our perspiratory glands are at their work, sending forth sensible or insensible perspiration; of which a large portion is lodged in our garments; it is poisonous there, and must be dislodged. For our outer woollens the sun's rays are an admirable cleanser, decomposing and dispersing the condensed fluid; for those worn nearer the person, nothing but the wash-tub will suit, and this used at very short intervals. We therefore deprecate very strongly the habit of wearing cloth trousers without cotton or some washable drawers beneath, and of women wearing quilted and flannel skirts which are not washed unless they *look* soiled. A week's perspiration makes them more truly unfit for wear, than a month's dust, or any such *clean* dirt could. For the same reason, a silk cravat, worn week after week, without anything between it and the bare throat, is an equally objectionable fashion; he who does it carries his own filth about with him. We use strong terms, but we do not conceive that any can be too strong to express the repugnance that all ought to have to the refuse of their own bodies. Under this head, also, we suggest that the boots and shoes should be frequently sunned.

Besides its influence in preserving the proper temperature for our bodies, dress may, simply from its fashion, affect our health to a greater or less degree. With the male dress,

though there is much to find fault with on the score of good taste, there is but little to complain of as affecting the health ; — the present unsightly hat, keeping the head constantly surrounded with its own perspiration and bad air, and the shoes, in common with those of women, modeled for an ideal rather than the natural foot, being the most objectionable articles.

With woman's dress we have much fault to find, though in setting about the task we have but little hope of achieving any improvement single-handed ; and were it not that some of their own sex have not only confessed their conviction of previous errors, but set themselves right resolutely to correcting them, we should consider it but lost time to say aught upon the subject. No autocracy has ever been so powerful as that of Fashion ; no Eastern despot more exacting of his subjects ; no Russian serf more complying than her votaries, who, for the most part, have experienced the worst of enslavements, that of the moral sense — even losing a perception of the extent of their bondage. We have seen projecting shoulder-blades, unequal shoulders, crooked spines, distorted chests — the heart forced one way, the liver another, the most important organs of the pelvis displaced, the toes jammed together ; but we never yet have met with one so afflicted, that could be made to believe that her dress had anything to do with it — that she was ever laced too tight, or had a shoe a particle smaller than it ought to be. Twice, on one female patient, have we had to perform one of the most revolting of surgical operations — tearing out the nail of the great toe, in consequence of its being imbedded in the flesh by a tight shoe — an operation, from the exquisite agony that accompanies it, ever a particular favorite with Pagan and Christian Inquisitors — yet that severity was met, and without chloroform, too, rather than offend Fashion by wearing a square-toed shoe, when she had ordered that a narrow-pointed one should be



used. The principal faults in the female dress are the following :

The chest is clothed, invariably, too tightly, even where corsets are not worn. With man, who has but little restraint from his clothing, the capacity of the chest for the inspiration of air has been found, upon experiment, to be lessened one fourth, when clothed ; how much more must it be with a woman, with her close-fitting dress, frequently so made that it is impossible to raise her elbows but partially from the side, and this, too, not of good, warm material, suitable to the protection of her lungs from the inclemency of our climate, but of delicate tissues, the fear of splitting which asunder still further cramps and embarrasses the play of the respiratory muscles ? No wonder that the middle life of our females should exhibit prominent collar-bones, angular shoulders, and flat chests. The muscles which should fill out these parts, and give them a graceful roundness, have long since perished for want of use ; and cotton-wool has to take their place, if symmetry is required—surely a poor substitute for flesh and blood. Another effect of such dresses is seen very frequently in an inequality of the shoulder-blades ;—the right one, instead of lying in apposition with the ribs, sticks out behind, presenting a sharp edge of bone where it ought to exhibit a good cushion of muscle. The reason of this is, that the muscle which should hold it in its place has been superseded by the *elegantly* fitting dress, drawn tightly over the back ;—it has, consequently, for want of use, dwindled away, and, as the arm articulated to the blade comes more and more into play, the dress serves its purpose badly, and distortion occurs. A man's coat fits equally smooth, but it is open in front, so that the use of the muscles is but little interfered with, and his habitual activity fully compensates for this interference ; still, we do not quote this as perfection, but think it might be altered greatly for the better. With corsets, matters are much

worse — so much so, that we can find no explanation, except the blind subjection to fashion, mentioned above, for their use. What *reason* can be given for casing up in splints, and embarrassing in their action, the muscles intended for the most important of our vital functions? And yet many still think it absolutely necessary, for the full development of a woman, that she should be so served — that, at a certain age, she should put on this badge of servitude, suffer this martyrdom. We were once asked by a fond mother, as if it were a matter of course that the thing must be done, “When shall I put corsets on my daughter?” “When I put them on my horse,” was the reply; a rude one, it may be thought, but not so. It was an abrupt expression, in strong language, of the horror felt that the beautiful frame before us, so perfect from her Maker’s hands, was, on such gross presumption, to be *improved* upon by a French dress-maker; and, happily, it effected what more measured expressions and labored reasoning might have failed in doing. Apropos to this — seeing a Chinese woman hobble by on her stunted feet, we turned to an intelligent native standing near, and rallied him, good-naturedly, upon the absurdity and cruelty of the fashion. His answer fully repaid the raillery: “Fanqui fashion much more foolish; — rich woman no hab ’easion for feet — all women hab ’easion for body.” We are frequently told, in answer to remonstrances, “I cannot do without them — I must have something to support me;” and we have frequently been assured that young girls, in putting them on, “feel so much more comfortable.” Of course this is true, and if the lower limbs were straitened and encased in splints, for the first twenty years of life, so that the knee never bent, were those splints removed, we should not expect that an erect posture could be maintained; the muscles that were intended to do it, by that time will have dwindled away and lost the power, and only by continued efforts to that end could it be given them again. So when

previous use of corsets, or when, in a young miss, an *elegant*, tightly-fitting dress has wasted the spinal muscles, corsets do become necessary, and are very comfortable. On the same principle, the drunkard's dram is necessary to replace the lost tone of his stomach, the chewer's quid, the opium-eater's pill, the cripple's wooden leg, are necessary. Not necessary in the healthy, well-developed being, but only in those whom circumstance has reduced below the standard—a category in which we must include those who require corsets.

It has been our fortune to visit countries, the females of which are considered remarkable for the beauty of their figure, and for the grace and elegance of their carriage—the Hindoos, the Araucana Indians, the Peruvians, the Tahitians—by none was the use of the corset, or of anything answering to it, known; but, on the contrary, the chest was free from confinement, and every opportunity given to develop the muscles surrounding it and supporting the spine. It is also a fair argument that men do not require corsets, and yet they have not a single spinal muscle which woman has not; and, moreover, for one crooked spine in a man, twenty can be found in women. Indeed, the extent of this deformity amongst our females is incredible, and actual observation is absolutely necessary to enforce full conviction of it. Upon hearing what was deemed a most extravagant statement, by a physician, of the overwhelming proportion of crooked spines to straight ones in a southern city, we doubted the fact. A large meeting dispersing at the moment furnished opportunity for testing it, and gave a most triumphant but sad confirmation of the truth of his assertion. Still later, one of the oldest and most eminent of the physicians in Boston told us that, on a public occasion, a procession of several hundred female operatives passed him in such a direction that the backs of each rank were in turn presented to him, and no assertion of another would have enabled him to realize the number of crooked

spines he saw among them. His inquiries as to their occupation and term of employment gave no explanation of this ;— a large number were fresh from the country, and of the majority, their term of employment — varied greatly — was less than one year ; too short a time, even had it been of one uniform kind, to have produced such results. The deformity must, therefore, be accounted for, by coming to the conclusion either that the sex is naturally defective — a position which the exquisite forms of the females of less civilized countries would drive us from — or that the dress and habits of our women cause it.

The clothing of the person below the waist has two very great faults. The least, and most readily remedied, is, that, as now worn, it drags upon the ground, and in wet weather hangs damp about the ankles, laying the foundation of colds, rheumatism and neuralgia, disordering the circulation of the lower extremities, and tending to the production of enlarged veins and hemorrhoids. This may be doubted by those who have warm fires at command, and ready changes of dress, though the risk they run is not slight ; but the mass of our women — our thousands of operatives, whether in large factories or in their quiet workshops — have no such resources, but must toil through the day in the same dress that has dipped in the rain-puddles, or draggled through the snow, on their way to their place of labor ; and on them, in particular, we urge attention to our views on this point.

The most serious fault, and one which we fear is most difficult to remedy, is the weight of the skirts now worn, and the manner in which they are supported. With a view of improving, as it is imagined, the figure, skirts are worn to the number of six, eight, and ten.\* The weight of these is borne

\* This is on the confession of ladies themselves, or we would not believe it, or dare to state it. In one instance, by the use of steelyards

entirely by the hips. That this may be done, the strings are drawn very tight, producing, and keeping up continually, a compression, which must embarrass the organs within, only protected by the soft, yielding walls of the abdomen. But, besides this, the weight of the skirts—amounting, as ascertained by actual experiment, to ten and twelve pounds—is all the time forcing downwards the contents of the abdomen and pelvis. The power with which this weight acts can only be fully appreciated by mechanics, and they will bear out the assertion that it is nearly two-fold what it would be if acting simply by direct pressure. With this fully before us, we cannot wonder that displacements of the most important organs within the pelvis, put down, in books written but a few years ago, as diseases to be found, unless exceptionally, only in women worn out by the frequent labors of a mother, or in those in the decline of life, are now met with in many who have not yet reached womanhood. Nor can we be surprised at the demand for abdominal supporters and trusses by those of the same early age, nor at the perfect inefficiency of these instruments. To be efficient, a moment's reflection will show, that they must, in the first place, clasp as tightly as the drawing-strings of the skirts; that they must overcome the weight of these skirts; that they must do this *thoroughly* before they can *begin* to support the organ they are intended to sustain.

Now, let any woman, requiring an abdominal supporter, in fitting herself to one, first hang upon one end of it a weight equal to that of her skirts, and she will be astonished at the strength of spring required to sustain this. Yet the instrument is useless, remember, unless it does it.

Having obtained such a one, how much comfort can she in her presence, we convinced a lady, and astonished her much, that a wadded skirt, one of four she had worn the day before, alone weighed over five pounds.

have under its use ; and what chance have the organs within her of doing their duty faithfully and properly, with a ten-pound force above, pressing them downwards, and a ten-pound force below, pressing them upwards ; and how long, under such treatment, will it be before she can lay aside artificial aids and assistances, and consider herself a *well* woman ? We hope we have made this so plain as to leave no room for misconception ; and we hope we have urged it so plausibly and strongly that it may become the subject of earnest consideration with the reader, particularly if she rejoices in the mothership of a daughter. We look upon the mischief thus done as no whit less than that effected by tight-lacing, but, if anything, greater ; for it is more silently done. Friends cannot see the evil at work, and, therefore, can give no warning word ; the symptoms themselves commence so gradually, and point so indirectly to the cause, as to excite no alarm in the victim ; exercise, which ought to invigorate, soon fatigues, and becomes distasteful ; ascending a flight of stairs, or stooping to lift a comparatively light weight, instantly loads the hips with a burden that can scarcely be borne ; the back, particularly the lower part, feels sprained, and memory is taxed in vain for some injury to account for it ; dragging sensations around the hips, and weak knees, are attributed to rheumatism ; every monthly period brings renewed sufferings, from which the system rallies more and more slowly. The symptoms may now begin to point more directly to the real seat of the trouble, in daily and hourly embarrassments of nearly all the organs within the pelvis ; an irritable bladder, hemorrhoids, and unceasing pain in any position but a recumbent one ; the retiring delicacy of early womanhood shrinks from telling these, and, unless marriage happily brings her under the notice of a physician, the mischief soon goes beyond hope of relief.

As a palliative for all this, shoulder-straps may be used ; but these load the shoulders with a burden they ought not to have,

and round backs must not be wondered at under it. As a cure, we should say, give up the skirts; except the outer one and one under it; and let warmth and comfort be obtained by substituting drawers of material and thickness suitable to the weather; supporting them by an under jacket. Were this done, another great advantage would be gained in the readiness with which the clothing could be accommodated to any momentary occasion of out-door exposure, or sudden change in the temperature; whilst now these demands are disregarded, to the frequent prejudice of the health, because with the present dress it is too inconvenient to make necessary changes.

In these extended comments upon the dress of our women, it may look like a disposition to be over-critical to find any further fault; but we have been consulted more than once, by young persons, about swelled feet, and discolorations caused by enlarged veins around the ankles, which affections—the latter a very serious one, if neglected—we have traced very directly to wearing the garters too tight. This sentence is sufficient for the subject.

About shoes, as more particularly affecting the feet, we shall speak hereafter; as affecting the health, we can only say that men do not find the thickness of a quarter of an inch to the sole too much for frosty and wet weather, but often increase this to three eighths and one half inch. Women insist that one eighth of an inch, and less, is sufficient; but we have never been able to understand why it should be.

Now, we wish to call particular attention to a moral aspect of the subject, namely, that of all the peculiarities of woman's dress at which we have taken exception, and which an appeal to the laws of physiology shows conclusively must seriously influence her health,—low-necked dresses, tight and constraining waists, corsets, heavy skirts, narrow and thin-soled shoes,—for not one of them is the shadow of a claim made that they contribute in the slightest to ease or comfort; but, on the contrary,

it is openly professed that they are used solely and entirely for the improvement of the figure. By which we are driven to the inevitable conclusion, that either woman was sent "into this breathing world, scarce half made up," or that French dress-makers have greatly improved on the pattern as originally devised by the Creator.

The importance of these views so impressed itself upon us, that the subject of much of these remarks was thrown into a more strictly scientific form, and read before the Boston Society for Medical Improvement. At the request of many, it was afterwards published in the Boston Medical and Surgical Journal, August 6, 1851, and since then we have had the pleasure of seeing it copied into other journals.

#### EXERCISE.

The object of general exercise is to genially stimulate the circulation, and by that means rouse the various organs, otherwise liable to sluggishness and inaction, to a wholesome activity in the performance of their functions.

The rules for it are few and very simple. As one of the first, we consider that the mind, as well as the body, should be exercised, and that pleasantly. The remedy should, therefore, be used, when possible, in the companionship of a friend; or, if taken in the form of a walk or ride, and alone, the scene of it should be agreeable, or the terminating point made the house of a friend, or something about which the mind can indulge in pleasant anticipations. Without such moral and mental impressions, one of the most delightful remedies for the restoration of an invalid, and one of the most agreeable preservatives of the well man's health, cannot differ in its influence from the methodical walk to the counting-room or workshop, or even from the convict's routine at the treadmill.

This will suggest that it is a mistake to have one's residence



distant from the place of business, with the proposed advantage of its ensuring a healthful amount of exercise in going from one to the other. It would be better to have this a thing of itself, not taken upon necessity, but as an enjoyment, and the scene of it varied with the will of the moment.

Exercise should be proportioned in amount to the strength of the individual. Too much is as injurious as too little; unless the person rallies readily from the fatigue, it is a sign that too much has been used.

It should not be taken upon an empty stomach, when exhausted nature is crying out for its sustenance, and therefore not before breakfast; nor, on the other hand, immediately after eating. With invalids we have seen very bad effects from giving them too much food immediately upon their return from a walk or ride, under the impression that they required it to support them. The best plan, where there is any craving for it, or a feeling of exhaustion, is, to let them take a biscuit and wine, or something of that light nature; and, when rested, the regular meal may be eaten. Even with well persons, we have seen dangerous effects produced by eating a meal, which undoubtedly the stomach craved at the time, but which was too much for the digestive organs, enervated, in common with the whole system, by recent over-exertion.

Exercise should be equable and regular; not a long, fatiguing walk, or other violent muscular exertion, one day, and entire neglect of it for the two or three next.

With a view to the object of it, mentioned above, it should be something more than a quiet saunter or slow drive; it should *stir* the blood.

The inhabitants of the city, and those tied down for the best hours of the day to their occupations, may not have the opportunity for general exercise, and yet may counteract much of the evil tendency of too close confinement, and want of proper muscular exertion, by partial exercise. This should

be taken, as far as possible, on the principles laid down above.

To draw out greater muscular exertion in partial exercise, various contrivances, more or less complicated, have been devised. We deem these unnecessary, and would discard all such, save the old-fashioned dumb-bells, and the lately invented "chest-expander," which consists simply of an India-rubber strap, of proper length and thickness, supplied with a handle at each end. At the beginning, the bells should not be very heavy, or the strap too thick. This would immediately tire enough muscles to make further exertion irksome, leaving the majority but little, if at all, exercised. It would be unnecessarily adding to what we have said, to give more minute instruction upon the method of using these aids to best advantage. They can, with a little ingenuity, be made instrumental in exercising in turn each muscle of the arm and chest; and the management of them should be so varied as to do this. As the bells feel lighter, or the strap seems to require too little exertion in using it, they should be replaced by others, which will tax the muscles more.

Even without these aids, much may be done in the way of partial exercise. We should advise the operative with the needle, or the clerk at his desk, never to abstain for more than an hour at a time from getting up and walking a half dozen times across the room, or, still better, in the open air; at the same time throwing back the shoulders, and stretching the arms behind, so as to expand the chest, and keep its muscles in a state of aptness to play. We guarantee that in the end it will be found that no time has been lost by these interruptions. The fuller inhalation of air, particularly if fresh, will give an energy and strength that will readily accomplish more work than a brain and fingers filled with sluggish blood could do, so that in the end no time will be lost.

We do not enter into the particular advantages of boxing,

fencing, riding, swimming, etc., because enough has already been written upon these methods of exercise. Too much, however, cannot be said in favor of athletic exercises *for both sexes*. It is the habitual use of them as a national peculiarity that has greatly tended to make England what she is ; and a want of such use that has done much to stamp us with the physical traits always specified by travellers in describing Americans with too great uniformity to permit us to deny their truth.

We have emphasized our approval of athletic exercises for both sexes ; we wish here to put in a still stronger plea for the gentler. The fact that an English woman lives half a century before she begins to wane, while our females reach their prime mostly at a little over half that age, and that another lustrum finds them often on the decline, ought strongly to arrest our attention and induce us to examine whether we are right in attributing all this difference to climate, and whether we might not find in our habitual methods of training the girl at least a partial explanation of the disparity. To state broadly, then, our convictions, we think it is a radical error to make a difference in the physical training of a man-child and the woman-child, before nature has made a difference in their physical nature.

We see no anatomical or physiological peculiarities, in a girl under twelve or thirteen years of age, which should debar her from any of the inestimable advantages that a boy receives in his freedom of dress and motion ; nor, indeed, with some occasional modification, after that age. She has the same blood to be aërated, the same lungs to aërate it, the same muscles to be strengthened, the same digestion to be stimulated. She requires, therefore, the same fresh air for her lungs, the same exercise for her muscles, the same invigorating influence of bodily activity for her digestion. The one, however, on return

from school,\* takes his hockey, his ball, or his hoop, and soon freshens mind and body in a joyful exertion of each. The other, in a close room, most likely learns to hem a handkerchief, or entertains herself with a doll.

We cannot but believe that were the physical female under twelve years of age looked upon in the light in which we have placed her, and that were the course we have sketched out pursued in bringing her forward to the uses of womanhood, those uses would be properly performed, and with far less wear and tear to the general system than that which it is now the daily pain of every physician to witness, and which often makes her a wreck long before she has served her ultimate physical use — her crowning office, as a mother.

We would go further and say, that the same mistake is made in her moral training also, and with the close connection that exists between the moral and physical being, this cannot be unimportant even in its lowest point of view. Her moral

\* The mention of school recalls the gratification we have had in the energy and success of the attempts made to better rooms used for this purpose, not only as regards heating and ventilation, but, in a particular scarce less important — the personal comfort of the child in his seat and desk. Boston, in these efforts, has had the lead, both as to time and degree of excellence. The last improvement in the way of furniture which we have seen, and which excited particularly our admiration, was a cast-iron tripod, supporting a drawing-board, which can be raised or lowered at pleasure, and also tilted to any angle, so as to be used standing as well as sitting. This is made, and, we believe, was devised, by Mr. Joseph L. Ross, manufacturer of school furniture. Ivers-street, Boston. Drawing we have valued very highly as an occupation for children — particularly for girls — because it absorbs the energies, and occupies without over-stimulating the mind, as reading is often apt to do ; calming and not exciting the nervous system. It has, however, always had a *drawback*, literally, to its practice — the position required at a table. The contrivance above mentioned wholly removes this, and really makes drawing available in many cases where otherwise it would be entirely out of the question.

training should be such that, while it makes her not less a woman, it should enable her to rise above the hundreds of arbitrary conventionalities that now in every way fetter her, that mould every thought and control every judgment; that, under the names of "propriety," "refinement," "eustom," "fashion," exert an absolute tyranny over her from the cradle to the coffin. This tyranny is broken through only in a few individual cases, and then by a rebellion, which, for want of the very moral training that originally permitted the oppression, is often so outre in its aspect as to expose her to the charge of unsexing\* herself, and to render her, if not repulsive, at least an object of ridicule and sarcasm. In short, we wish that woman should be taught to know her proprium, and to make herself fit to fill it, not as the antagonist in the slightest sense, but as the complement of man — the other half of a beautiful unity. While, then, the physical training we urge would never enable her to sing bass, the moral training would never fit her for the rostrum, the pulpit, or the bar. On the contrary, it would not only enable her to see clearly her unfitness for these, but it would still further and better enable her to see as clearly a hundred duties around her, which are peculiarly hers as a woman, and the full and faithful performance of which would save her from that carking care, that discontent, most often unrecognized by herself; that listless aimlessness that now saps the moral and necessarily the physical vitality of hundreds of her sex — that wears them down in mind and body — that brings them sick

\* We often hear horror expressed at a woman's "unsexing herself," which, used very arbitrarily, generally means doing something independent of, and differently from, the generality of her sex, by which she is thought to assimilate herself to a man. There is, however, no such horror at women *dis*-sexing themselves, rendering themselves, by a life spent in utter defiance of the laws of physical and moral hygiene, of no sex at all — becoming mothers only at the expenditure of half their feeble vitality, and wholly unable to nourish their offspring.

headaches, crooked spines, flat chests, hysterics, and painful and premature old age.

### SLEEP.

It has been a much-vexed question, how much sleep is required for health. The time given in answer has varied from six to nine hours. The rule can only be a general one, and as such, we would say, eight hours is necessary and sufficient. We know, however, of a gentleman who enjoys excellent health on a scant three—a lady who finds four sufficient; these are clearly exceptions. On the other extreme, one of the most brilliant minds and ready wits we know—a man too of indefatigable industry—spends always nine hours in bed; and a distinguished jurist, of master-mind and great application, used to sleep as long as he felt sleepy, without regard to time. The advantage, however, of each person ascertaining as near as he can the allowance he requires, and of adhering to it with regularity, both as to time and quantity, is obvious.

The bed, if some infirmity does not require a softer one, should be a mattress; fine corn-husk or Campeachy grass is the best; lower priced, but more expensive in the end than hair, as it requires renewing much sooner. The clothing should be suited to the temperature, but made as light as possible. Heavy-corded quilts are not warm in proportion to their weight, and are therefore undesirable. Comforters, though light and warm, cannot be washed, and, therefore, become receptacles of perspiration. They should not be used. Blankets should be washed oftener than they are, and all the bedding should be frequently sunned and aired. More attention ought to be paid to bedrooms than we generally find. They should not only be aired, but be kept supplied with air. If our sitting-room is close, we are aware of it, and can remedy it; if our bedroom is, we are at the time insensible to it.

## BATHING.

In describing the scarf-skin, we incidentally spoke of partial ablutions ; the same directions will serve for general ones, except that we would advise that soap be not very frequently used. We have found, in several instances, even when the soap was the best, it would cause an itching in parts where the skin is delicate ; and if ablution is employed as often as it ought to be, — say at least twice or three times a week, — it is not necessary. With proper care, pure water will remove all ordinary impurities from the surface.

Cold bathing, however, has a purpose beyond ablution, important as this is. Its use is much as that of general exercise, — to quicken the circulation, and excite a genial glow throughout the whole system. Amongst us, at the present day, the tendency is to use bathing very generally ; and, if not to overrate, at least to extol its excellence, without proper qualification. We do not, therefore, deem it so necessary to urge its use, as to give some advice by which discrimination may be made as to when and how to use it, and when it should be disused.

Invalids, and, indeed, many who would not like to be called so, yet whose vital energies are rather below the average standard, should use cold bathing with great care. We have seen many who have been urged by friends, themselves benefited by it, to adopt it, and who have used it not only without advantage, but to their manifest prejudice. For it to be of any service, there must be a certain power of reaction, which will very soon restore the natural heat, and entirely dissipate the feelings of languor and debility that it first induces. It is desirable, therefore, that it be taken at such times as the vital energies are in good condition, with invalids at their maximum. When, even at their height, they are not sufficient, the temperature of the water must be raised so as to lessen the depression produced by cold. Frequently a person will be able

to use a cold bath, if it is taken immediately upon getting out of bed, when the system is still under the stimulus of its warmth; whilst, if delay be made, even for a few minutes, the lower temperature of the room will entirely dissipate this stimulus, and the same bath that, taken more promptly, would have benefited, will have the contrary effect. We have often advised those in whom reaction is tardy to get back into bed immediately after bathing, and remain there until warmth is fully restored. This simple expedient has enabled many to continue with benefit a practice that was evidently before prejudicial, or, at least, brought no advantage.

With those of good active circulation, the above precautions and expedients are not necessary; yet they should take care to be governed by rules which may have suggested themselves in reading the above. Great fatigue, or a very depressed temperature, for instance, may put them, for the time, in the category just mentioned, of not having sufficient power of reaction. A bath should not be taken upon a full stomach, when the energies of the system are required to digest its contents, nor when the system is violently overheated.

As to the kind of bath to be used, convenience must greatly control this; though there are some differences between baths on other accounts, which require a brief notice. For convenience of a chamber bath, a pan large enough to stand in, and having a brim some eighteen inches wide running round it, to catch the dripping and save the carpet, is much used, and an admirable thing it is for the purpose. To bestow the water upon the person, the best thing is a coarse sponge. Select a whole one, which is round, and somewhat flattened. This is much better than a piece with sharp angles, that make points for the water to drip from. They may readily be found large enough to hold a quart, and these are a good size; larger, they are unwieldy—smaller, they take too long to drench you. Coarse ones are emptied more readily than fine ones.



A common flat glazed pan, with two or three brass wires stretched across it, to support the sponge and raise it from the bottom, so that it may drain, is the best thing to keep it in, when not in use. When the bath is over, the sponge should be squeezed as dry as possible, to keep it from rotting. We give these details thus minutely, because we have found many who have given up their daily bath, simply from not knowing how to take it with effect and without trouble.

The next convenience for chamber use is the portable shower-bath. This is, possibly, as far as the simple bath goes, more convenient than the other; but it does not serve so many uses — for ablution, partial bathing, etc. — and the effect is over at once — cannot be prolonged; besides inapplicability from causes mentioned presently.

Where neither of these are at command, yet a wash-tub of ordinary size is procurable, a bath may be taken without making a slop, by crouching down in it, and using care in distributing the water.

If travelling, and no other convenience is at hand, a good substitute for a bath may be made by dipping a large towel into a basin of water, and swabbing the surface over with this rapidly.

In drying the person, we have already mentioned the use of crash towels as the most advisable. They should be not less than a yard in length, to permit them to be readily extended over the back, and drawn back and forth, so as to thoroughly dry every part of the surface. The drying may be completed with a coarse hucabae towel, which is more absorbent than the other, and, therefore, better calculated to remove the last remains of moisture.

Above we have spoken of the different kinds of baths, in view of their relative convenience. There are, however, other considerations which must influence us in preferring one to the other, when we have a choice.

Water, applied to the surface, has two effects—the one dependent upon its temperature; the other, upon the shock it gives to the nervous system. In using the bath, we must, therefore, take into consideration, not only its relative heat or cold, but also the manner in which it is brought into contact with the surface. Our remarks under this head have been solely applicable to the cold bath, by which we mean, not a bath of any absolute depressed temperature, but one which conveys a sensation of coldness to the skin. The degree at which water will do this varies with different persons; and what would be very agreeable to one, would prove distressingly chilly and depressing to another. In selecting, therefore, a temperature, we must be careful, as may be gathered from what we have before said, that for an invalid, or one of feeble vital powers, it be not so depressed but that the circulation, driven in by the first application of the water, may soon return to the surface. It is plain that—use what mode we may—the temperature can be adapted with greater or less convenience to the wants of the bather. Not so with the other effect. This depends not on temperature, but on the suddenness and impulse with which the water meets the surface of the body. The amount of shock thus given varies much with the nervous susceptibility of the individual; it is, however, sufficiently great in all to make it, sometimes even with the well and hearty, of importance that care should be used in first subjecting a person to it; and with an invalid its effects might be overwhelming. Water, applied with a towel, gives the least shock; the sponge-bath next; the plunge-bath is more powerful, whilst the shower-bath\* has an effect that,

\* There are two kinds of shower-baths used in our houses. In the one, the water comes directly from the end of the water-pipe, which is expanded into a large watering-pot muzzle. In the other, there is a tank overhead, filled through a cock, furnished with a float-ball, so as to keep it always full. From this tank the water descends in a

even in the strongest, long practice seldom entirely overcomes; and that, of course, must render it wholly inapplicable, not only to persons of feeble health, but to a large number who, though otherwise strong, have a nervous system which will not suffer such sudden and violent appeals to its sensibility.

Many complain that the severity of the shock of the shower-bath received upon the head leaves a very unpleasant effect for some time after; it may be readily prevented by using a tall conical cap, say fourteen inches high, which, parting the stream some distance above, still lets it flow down over the person. The best thing to make this of is a thin sheet of gutta pereha, rolled into a cone, and stitched down one side. The oiled-silk cap, commonly used in bathing, does not defend the head from the impulse of the water in falling, and it splashes much of it off from the rest of the person.

In beginning the practice of bathing, the first essay should be made during warm weather — say July, if possible — so that the system may get thoroughly accustomed to it before the cold weather sets in. It can then be continued through the winter without inconvenience or disadvantage; whilst, if commenced later, the system might lack that power of reaction which, we cannot repeat too often, is absolutely necessary to make bathing beneficial.

We have also found it necessary, both in order to fit persons for cold bathing, and to enable others to keep up the habit during intensely cold weather, to put them upon the use of tonics, until the system is raised to a certain point, when the cold bath of itself can act as the “propelling power.” In one case, we were consulted by a clergyman, for symptoms of dyspepsia, which we attributed entirely to debility. Our prescription was a cold bath daily, beginning it with the precau-

flood, and soon drenches the person; whilst from the other the water comes so slowly that the bather is often chilled through before the surface is wet. We therefore advise having it made with a tank.

tions above mentioned. This answered admirably, relieving him of his "Monday feelings," and other evidence of the over-working of a feeble frame, until the cold weather commenced, when he found that the bath produced chilliness and great discomfort during the most of the day. The cause was, that the temperature went down more rapidly than his strength went up. A glass of wine, daily, remedied this inequality of ratio between the two, and the bath was again taken with comfort and benefit. In another case, a gentleman of sedentary habits suffered much from a chronic inflammation of the throat, that stopped up the eustachian tubes which open from the ear into it, making him quite deaf. No remedy seemed to reach it, and cold bathing was the only thing that held out any promise of benefit; but, upon trying it, he could not get over the chill produced, even when the water was raised in temperature. Tincture of bark, however, very soon brought his system up to a starting-point from which he could progress by means of his bath alone.

Having given these qualifications, and cautions under them, we feel we can scarcely commend too highly the advantages of habitual daily cold bathing. In many invalids, particularly those affected with low grades of chronic inflammations, tedious sore throats, bronchial affections, certain forms of dyspepsia, old glandular swellings, etc., no alterative proves so serviceable in breaking up the diseased habit as the impulse that the cold bath gives to every vital force. The tone of the parts, still comparatively healthy, is increased, and those where disease has been at work partake of the kindly influences around them, participating in the genial effect of the glow lit up in the system, and obeying the healing force that nature is so readily disposed to exert. With the well, it imparts hourly and momentarily tone and vigor to the movements, both of physical and organic life, that go as far as any such means can towards insuring both the enjoyment and prolongation of

existence. The readiness to reaction that is engendered by a proper training with the cold bath, is of itself invaluable as a preservative to health. It enables the person often to throw off influences which, on one less fortified, might prove most controlling. It thus makes the difference, after exposure to a winter's storm, between a temporary chill, from which the system soon rallies, and a lung fever; or between a passing inconvenience from wet garments, and a protracted rheumatism. We consider, therefore, the physical training of every one to be deficient, that is not accustomed, as early in life as possible, to a daily cold bath; and would urge upon those who may have had this much of their education neglected, to strive, under the cautions we have given, to fit themselves, as soon as may be, to receive its beneficial influences.

Of late years the attempt to cure all diseases by water has resolved itself into a pseudo-system styled hydropathy. Like almost everything of the sort, it has a foundation of truth, and that a pretty broad one. In fact, water, properly used, is, as may be gathered from what we have said, a most powerful agent; but as it is powerful to do good, so it is, in just such degree, to do harm. Directed by the physician, it is one of his most valued means; used empirically by the hydropathist—the one-idea handler of it—it has often, to our knowledge, produced most mischievous results. It is so simple, and the arguments for its use so plausible, that many persons employ it on their own private judgment, and in this way we have seen many disastrous effects from it. The last of these was paralysis of the arms, following immediately the application of a cold bath to the spine.

The “wet sheet,” or “packing,” as it is commonly called, is the form of application in which the energies of the remedy are most striking and decisive. We use it at first with great caution, in order to assure ourselves that the reactive powers of the patient are fully equal to it, and begin by enveloping

the person only partially. Thus, for the first essay, the hips are wrapped in a common roller towel, about twenty inches wide, dipped into water at about sixty degrees. If this is readily endured — if the chill it causes soon passes off — and particularly if it be replaced by a proportionate glow, we may venture further, and envelop more of the frame in it, and use colder water, until we reach the point of wrapping the whole figure, from the arms down,\* in a sheet wetted with the coldest pump water. When so wrapped, the patient should be covered with blankets, and remain thus for an hour and a quarter. If the operation is such as is desired, the chill passes off at the end of fifteen or twenty minutes, the remaining discomfort in twenty more. Soon a glow is felt, which goes on to perspiration, attended by a positive feeling of enjoyment and exhilaration. After this, the whole surface should be rubbed dry, quickly, with a crash towel.

The proper time for using this remedy is the forenoon, though the particular hour is not important — we permit the patient to choose the one most convenient. Reaction is greater on first awakening, and, if nothing hinders, we should select this time.

Used in this way, under circumstances requiring it, the wet sheet is an admirable tonic, often tolerated and beneficial when the stomach refuses others, or when these might prove incompatible with some other condition of the system.

The influence of cold water, thus applied, seems much more deep and thorough than when it is simply taken in the form of a cold bath. We cannot suppose that a series of phenomena occurs in the one very different from those in the other; but with the wet sheet each one of the series is prolonged, and

\* We use one wrapper for the person, and another, say two napkins, for the arms. This leaves these at liberty, so that the person can hold a book, or some slight work, and thus beguile the time during the process.

in this way the depths of the system are more perfectly probed, and the more distant and hidden operations of disease reached. Thus in a cold bath the chill is endured, at furthest, five minutes; the body is then dried, and in another five minutes every opportunity is given for reaction, which comes on with greater or less despatch. With the wet sheet, the chill is prolonged for fifteen or twenty minutes—the rallying effort to force back to the surface the blood which had left it then begins, but requires from fifteen to twenty-five minutes more. Still, after this, the surface is excluded from air, and kept bedewed with a fluid now at blood heat, prolonging and heightening the duration and violence of the reaction. This seems to us a rational comparison of the two.

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## DISEASES OF THE SKIN.

The diseases of the skin are amongst the most obstinate and troublesome affections that a physician has to deal with, often taxing his skill and the patient's endurance to the utmost. It requires, in most instances, a practised eye to discriminate the affection, and an experienced judgment to advise the remedies. It cannot, therefore, be supposed that, in an essay intended, as this is, for the many, much can be said, with advantage to the reader, upon the distinguishing marks between one kind of eruption and another; and still less could any course of treatment be laid down, except of the most general character. There are, however, some few affections of common occurrence, and familiar to almost every one in their appearance. These, to a certain extent, at least, come legitimately within the province of domestic medicine. We have, therefore, whilst describing each structure of the skin, also described such affections peculiar to that structure as the reader, with assistance

of our explanations, might be able to treat. There are a few others which we could not, for divers reasons, bring in with those just alluded to, but which might be, in most instances, successfully treated at home. We will, therefore, presently, try to set forth, as plainly as possible, their nature, and the best remedies to combat them. In doing this, we strive to avoid all that is merely theoretical in the history of the disease, and not to multiply remedies unnecessarily, even at the risk of omitting the favorite "infallible" of the reader.

With two exceptions, the diseases of which we are about to treat are entirely local; or, to speak more correctly, they do not proceed from any internal source, any constitutional taint, or any fault in the performance of any of the functions of the internal organs. They therefore require nothing but local applications — no general treatment, and no modification of the general habits of life, diet, etc.

In the greater number, however, of diseases of the skin, the general system is either more or less at fault, or sympathizes to such a degree with the external affection, that, to combat this successfully, it is necessary that an important portion of the remedies should be directed to restoring the other to a healthy condition. Upon those remedies, of course, we can say nothing in detail; but our experience induces us to believe that we can give a little general advice, which may prove beneficial to those under treatment for such affections.

In some instances, the eruption is the immediate effect of a derangement of the digestive organs. Of course, in such, the great object is to restore these organs to a healthy state; — a thing very easily said, but, in a majority of instances, very difficult to be done; and that not so often from any obstinate perversity in the organs themselves, as from a want of coöperation, on the part of the patient, with the efforts of the physician. Persons are very apt to think that, unless under very positive directions, and those descending into the minutest



particulars, as to what is to be done, and what is to be left undone — what is to be eaten, and what is to be avoided — they are not called upon to exercise their forbearance, and still less their judgment, in any particular. Nay, more, they often think that if the physician only employs remedies strong enough, and often enough, he can accomplish the desired end, not only without their coöperation, but in spite of their imprudence and wilfulness — an expectation as rational as looking for a surgeon to treat a broken leg successfully by extra strong splints, the patient, in the mean time, insisting upon dancing on it.

Dr. Twitchell, of Keene, who, for the clearness of his perceptive faculties, and for a most happy tact in the practical application of the result of his observations, must rank among the first of the medical men of New England, in a conversation with him upon the subject of diseases of the skin, a few days before his death, after speaking of several of the most efficacious remedies used, remarked that, after all, he considered them uncertain in their effects, and feeble in their powers, unless diet was, at the same time, most particularly attended to. So far from leaving this important part of the treatment to general directions and the undirected judgment of the patient — too liable to be warped towards self-indulgence — he laid down a rigorous course, which was to be pursued without intermission or exception during the whole period of the treatment, unless new symptoms evidently required a modification. Of course, the particular articles of this diet had to be selected with reference to the disease, and also to the individual; but the general principle upon which it was planned was that it should be easily digested — that it should contain nothing gross, and that it should furnish no more nutriment than was necessary for the purposes of life. Our own experience, as far as it has gone, has fully confirmed our estimate of Dr. Twitchell's views on this point; and so important do

we consider them, that we desire to contribute, as much as their record on these pages may do so, to their further publicity. As an instance of the efficacy of diet thus insisted upon, a case of *acne* was presented to us, which for years had resisted various treatments, some in which the most powerful alteratives were the agents. The sole course pursued was to confine the patient rigidly to a diet of bread and milk and water. Each meal consisted of two gills each of milk and boiling water mixed together, and as much bread as could be agreeably moistened by it. Upon this diet, aided by no other remedial agent, we had the satisfaction of seeing the eruption disappear. Other cases might be quoted, but the one given will serve as an example.

Upon another important point we think the patient ought to be advised. We have just said that diseases of the skin, with some few exceptions, are more or less constitutional, as it is called; that is, the general system is more or less implicated in them. They are also—at least, those that give the most trouble and are most difficult to cure—*chronic*, that is, of long duration. They cannot therefore be ousted from their seat in the system by any sudden and violent perturbation of it. What is to be done must and can only be effected by gentle but long continued agents. For this the patient must make up his mind in the outset, and then not become discouraged because weeks, or even months, have produced no perceptible change in his condition. The experience of every physician can tell of patients coming to him, who, according to their own account, have exhausted the skill of many medical advisers, and whose disease had defied the virtues of half the *Materia Medica*; but, upon questioning these patients more closely, it will be found that they expected a disease, possibly of years, to be relieved in a few weeks, and that they have charged to physicians and drugs what should have been attributed solely to their own want of patience.

Still further, we wish to say a word upon the undue importance attached by many to diseases of the skin. We have seen numerous instances where little or no disfigurement was caused by a rash, and not the slightest other inconvenience, — in fact, where its existence would not have been known but for a looking-glass, or the kindness of an officious friend, and yet, had the individual been smitten as Job was, the suffering and annoyance could scarcely have been greater. In one case a patient stated that she had been afflicted for some years, and had spent and suffered much at the hands of physicians, and, still unrelieved, she sought from us alleviation of her trouble. Upon asking the particulars, we were referred to a most obvious, as she thought, “humor,” on her face. Still at a loss, the bonnet was removed, and five small, slightly reddened elevations on the forehead were exhibited as the grievous malady. We could not in conscience subject this patient to treatment, and represented to her the horrors of mercury, arsenic, and the like, but without avail. We left others, however, to use these. This is a strong case, of course, but it illustrates our meaning, which is, that if you have a good constitution, an excellent stomach, and faithful digestive organs, do not endanger the first, and abuse the two last, merely because some little portion of the outer surface is not so free from defect as might be. The imperfection gives you no real appreciable discomfort, while that perfection of the internal organs which you run great risk of impairing is a continual source of comfort and well-being to you.

## CHAPS AND CHAFES.

Chaps are amongst the most common, and also, at times, amongst the most annoying, of the affections of the skin. The seat of the trouble is originally in the true skin, which, being subjected to alternations of stimulation and depression, becomes irritated, and unfitted to protect itself by the formation of a

proper scarf-skin. This latter becomes hard and dry, cracks open, and discloses the inflamed skin beneath, which often bleeds at such cracks. If neglected, ulcers of the most painful character will form; and, from their situation at the knuckles or on the lips, parts much subjected to motion, prove very difficult to heal. With persons of delicate skins, a chaf sometimes takes place with very little warning, — a walk on a cool, windy day is enough to affect the lips, and even the face, considerably.

In treating chaps, the first thing necessary is to soothe the irritated state of the skin. To do this, the affected surface should be kept at one uniform temperature as much as possible. In washing the part, neither cold nor hot water should be used; for the one would for a time depress, and the other elevate, the temperature, and the consequent reaction would increase the affection we wish to combat. The best temperature is that at which the part would feel the least shock on being touched with the water. If soap is required, the soft, creamy lather made by putting Castile soap into warm water, is the best. It should be smeared on gently with a soft linen rag, and after a minute or two, as gently removed by similar means.

Having cleansed the part, to reduce the inflammation, in some rare cases, a poultice may be necessary — and, if so, one of bread and milk will serve best; but, generally, smearing the surface with warm mutton-tallow, or fresh oil of sweet almonds, will prove just as efficacious, and much more convenient. When so smeared, the part should be covered with a soft rag, but not warmly wrapped up. Having thus reduced all the adventitious inflammation, and merely left that which is incidental to the exposure of the scarf-skin, the affected surface should be bathed with some weak astringent fluid. As a general thing, brandy, diluted to such a degree as not to smart much, will answer as well as anything else. If too strong, it will bring back the inflammation. Tea, of the strength

usually drunk, lead-water, made by dissolving a dram of sugar-of-lead in a pint of water, and several other similar remedies, have also been advised, with the same object with which we suggest the brandy and water, to constrict the raw and exposed surface, and strengthen it to take on the curative process; they have, however, no especial advantage, but act more or less in the same manner.

The treatment we have just described will answer for any ordinary case, and, unless something is materially wrong in the system, will prove successful; but the great difficulty with chaps is that they return as soon as cured. With some persons, this aptitude is merely the accompaniment of a diseased condition, which in all probability exhibits itself sufficiently plainly in some other way to leave no doubt of its nature and existence. Over-feeding, the habitual use of too gross food, or of stimulating drinks, is a frequent source of such a condition. With others, however, it is a constitutional peculiarity that no treatment will remove, and which, therefore, must be met by extra care. Persons so troubled should protect the part liable to be affected from atmospheric influences. If the lips, they may be smeared, before going into the cold, with almond oil.\* The hands should be defended by the softest and warmest gloves; Angola wool, kid lined with fur, or, what is still better, India rubber; the last keeps the surface moist and soft, by retaining the perspiration for the time. In washing, the precaution above mentioned, of having the water as near as may be to the temperature of the skin, or, at any rate, but very little depressed below it, should be carefully attended to. If, in spite of these precautions, there is still a disposition to chap, and an irritated or irritable state of the skin, — say of the lips or face, — the part should be smeared at night with a cerate, for which Wilson gives the following receipt:

\* In using almond oil, be particular that it is not rancid, as it is very apt to be. Rancid oil is highly irritating.

## CERATE FOR CHAPS.

Pure olive oil, one ounce.

Yellow beeswax, half a drachm.

Melt the beeswax in the oil, with a gentle heat, taking care not to burn it; and, when melted, stir in —

New honey, one drachm.

White flowers of zinc, half a drachm.

Keep stirring until cold, or the zinc will fall to the bottom.

This should be briskly rubbed in, and the part then wiped with a soft towel. When the hands are the seat of the trouble, the most convenient course — though liable to some objection — is to wear, during the night, gloves saturated with oil of sweet almonds. The hands should be washed before putting on the gloves.

Another kind of chap, which causes a great deal of suffering, is that of the nipples, in nursing mothers. For these, as for the chaps of other parts, dozens of remedies have been devised; almost all good of their kind, but, in the application of them, most grievous errors are made, from a want of discrimination as to the precise condition of the part. There are three states of the nipples which may require aid, but each different from the other; and a remedy most excellent for one, might prove utterly inefficacious, or even highly injurious, in another. There may be simply a great tenderness of the part — no split in the skin, but a great liability to it. For this, we only want some unirritating astringent, which will toughen the skin. Any of the astringent tinctures will serve this purpose, but we have generally preferred pure brandy, covering the nipple with some three or four thicknesses of soft linen rag, wet with it, all the time that the infant is not nursing. The next condition of the nipple which we find is where it presents cracks in its surface, liable to be made very painful when the infant attempts to nurse. For these a very similar course of treatment is required — simply drying them

up by an astringent application. For this we use tincture of catechu diluted with water, until it can be readily borne without pain; and keeping the nipple wet with it, as in the last case, whenever the infant is not nursing, taking great care, also, the while, to properly temper the strength of the remedy. Still further, there may be added to this last condition an inflamed state of the greater part or whole of the nipple. For this we must pursue a different course. The inflammation must first be subdued before we can do anything to heal the cracks. A thin and light poultice, of either bread and milk or slippery-elm, should be used until the pain is relieved; after this, the astringent tincture, or brandy, may be carefully applied. If, however, in doing so, irritation is produced, it must be abandoned, and some softening unction used instead. Cold cream — as the ointment of rose-water is called — or castor oil (very fresh) are, either of them, excellent for this purpose; though, if neither is at hand, sweet mutton tallow, softened by the admixture of a little olive oil, will be found a good substitute. To sum up, then, in brief, these three conditions of the nipple, and their respective remedies: we have, first, a great delicacy, tenderness and irritability, of the skin, which requires something to tan or toughen it, brandy or an astringent tincture; next, cracks on the surface, which require the same treatment, but more carefully and circumspectly applied, in order that additional irritation may not be excited; lastly, beside the cracks, we have an inflamed state of the nipple, which must be subdued by softening poultices, or ointments, before the cracks can be healed.

We have been particular in explaining the condition of things in, and laying down the treatment of, this painful affection, because we find it almost always reserved for domestic remedies; and these are often applied without appreciation of the wants of the individual case, but upon some general recommendation that the remedy “was never known to fail,” — a



quality which all such invariably possess. As an instance of this disposition to ignore the physician's skill in curing chapped nipples, we lately prescribed a little simple cerate for one; a few days after, our patient apologized for not having used it, and gave as a reason that a friend had supplied her with a prescription (of course, infallible); it consisted of beeswax and olive oil in equal parts, precisely the proportions that make simple cerate.

Chafes of the skin — that is, a removing of the epidermis by some violent friction against it, with possibly bruising, and irritation of the sensitive skin — resemble chaps much in the condition of things existing, and should be treated much in the same way. If there is simply a raw surface, use astringents alone. If there is an inflamed surface, use cloths dipped in cold water, until the inflammation is reduced. If the parts beneath the surface are inflamed, a poultice will be necessary; but take care not to keep it on longer than is sufficient to reduce the inflammation. We have often seen an ugly running sore regularly manufactured by too long application of a poultice. When the inflammation is reduced, the raw surface should be treated with an astringent wash.

#### WARTS.

In describing the papillary layer of the true skin, we pictured the papillæ as being microscopic in size; they are, however, liable to enlargement, and, in this enlarged state, the quantity of epidermis, or scarf-skin, which they manufacture, is in proportion to their size. Now, a wart is nothing more or less than a number of these papillæ enlarged, and each covered with a hard capsule of scarf-skin. When the wart is new these capsules adhere tolerably close together, and present on top a not very rough surface; but, as it gets older, the capsules become more horny and dry, and readily split apart from each other, giving the wart a ragged look. These capsules, like the



rest of the searf-skin, have no sensibility, and may be pared away without causing pain, until the paring is continued so as to touch the extremities of the papillæ, when the wart becomes very sensitive and bleeds.

What is the cause of warts is difficult to say. They are generally found in young persons, and mostly are confined to the hands, though the face, neck and back, occasionally give growth to them. Attempts have been made to account for them by the dirty and careless habits of children; but they are met with, too often, in those who are advanced beyond childhood, and whose habits would not permit such an explanation. We, therefore, for want of a better means of accounting for them, are disposed to class them among the results of that exuberance of nature which we often find in organized creatures still progressing towards their maturity of growth.

There are many varieties, both in form and aspect, amongst warts, obtaining for them distinctive appellations, based upon these varieties; but they do not differ in their nature, and the same treatment is applicable to all.

Unless warts are accidentally irritated, they are free from pain, or any other annoyance than that caused by their unsightly aspect. This, however, we have not inoften found to be very great; particularly in girls at the age when such things are thought the most of. For few diseases of such little real consequence have so many and such various remedies been devised. From the earliest times they have all partaken more or less of the mysterious and wonderful — often of the disgusting. One old German writer of some eminence recommends moss, from the skull of one who has died a violent death, to be rubbed upon the wart; and another most seriously advises taking a thread from the shirt of a criminal who has suffered by the law, tying as many knots in it as there are warts, and burying it in a moist place, where it will soon rot. A more modern remedy, though a century old, is to rub them with a

piece of stolen beef, and bury it so that while it decays the warts may dwindle. We would not attempt, on any account, to cast the slightest doubts upon the efficacy of these, or of several other such remedies' (which are too commonly and well known to require mention by us); but we would advise, at least, as a valuable assistant to them, paring down the wart as far as may be done without pain or bleeding, and then touching it with a drop of nitric or acetic acid sufficiently large to moisten its surface, but taking care not to get any on the surrounding skin, which, as a preventive against such an accident, might previously be smeared with a little simple ointment. This should be repeated once or twice daily, until the wart is removed.

### RASHES.

Under this general head we class several affections, for which scientific men have provided distinctive names, but which the general reader would recognize more advantageously by a description of them, and a mention of their causes.

One of the most common, and, for the time, most painful of these, is that generally known as nettle-rash, characterized by its sudden appearance in large wheals of a pale color, while the skin around is mostly of a somewhat deeper pink than usual. These burn and itch frequently beyond endurance. They are seldom persistent in the same place and form for a great while, but go in and come out again in another part. In some cases, this form of eruption is preceded by headache, general discomfort, a sense of oppression, slight fever; but, its victims being oftenest children, these are frequently disregarded, if they at all exist, and the first notice it gives is its appearance on the skin. The cause of nettle-rash may generally be found in some irritant at work disturbing the system, more particularly the secretions of the stomach and bowels; teething, improper food, indigestion, etc. It should be at-

tacked with cooling aperients, and, whilst these are performing their work within, the irritation of the outer surface may be allayed by lotions of spirit and water ; we have found bay rum particularly serviceable. Cases requiring more powerful remedies had better at once be put under the care of a physician.

In grown persons, we have several times met with a rash characterized by the same suddenness of its appearance, and the same intolerable itching and burning, as the above, but not presenting the raised, well-defined wheals, of a pale color. On the contrary, the variety we speak of is more generally distributed either in a uniform deep-red rash, or in very thickly-sprinkled points of a deep-red color—so thickly as to give it, at a little distance, the appearance of a uniform hue. The cause of this eruption can generally be told very definitely ; some food that has been eaten—lobster, crab, or other fish, pork, rarely vegetables, certain medicines, generally of a resinous nature, turpentine, Canada balsam, etc. Its onset is generally without warning, and sometimes perfectly wonderful from its suddenness. We remember being called once, in haste, to a lady whom we had left, precisely fifteen minutes before, in perfect health. Upon arriving, we found her completely covered with a deep-crimson eruption—even the whites of the eyes partaking of the trouble—and almost frantic from the suffering caused by it. The probable cause was a piece of lobster eaten at dinner, some two hours before. Under the free effect of Rochelle powders, the relief was almost as sudden as the onset.

There is a species of nettle-rash not so easily dealt with as these, being more persistent and returning often when relieved. It depends upon some deeply-seated influence, which often defies careful research and expert treatment, and which is not likely to be detected by or yield to the skill of the patient.

There is another kind of rash, generally confined to the nose, though sometimes appearing, besides, on other parts of the face. The skin is red — at times deeper in color than at others, even to a purple — and often desquamating; that is, the scarf-skin becomes dry, and peels off in little flakes. This rash is due to irregularities of the circulation, often caused by tight-lacing and imperfect protection of the person from cold, and also by improper exciting food, and by constipation. To remedy it, the cause must be carefully sought out, and strict rules adopted to guard against a continuance of the hurtful impression, both of which the patient, if intelligent, and under sufficient self-control, will very often be able thoroughly to achieve.

#### ACNE.

Among the most common and familiar forms of disease of the skin is acne, the name given to an eruption characterized by an inflammation of the oil-glands, and of the cellular tissue immediately around them. It is most frequent at the age of approaching puberty, and so much so that few seem to arrive at this period of their life without being more or less affected with it. The inflammation is very slow and indolent, commencing with a small, hard lump immediately beneath the surface. This, in longer or shorter time, according to accidental circumstances, reddens, exhibits a yellow point in the centre, from the matter within, breaks, discharges the matter, and leaves a small, hard, discolored lump, which very gradually disappears, leaving a small, whitish, depressed scar. In the mean time, the same process has been going on in a greater or less number of glands in the neighborhood, sometimes converting large patches of surface into a source of severe inconvenience and suffering. When the gland affected has previously been distended by its undischarged contents, and its

duct has collected dirt and dust at its mouth, the pustule of the acne exhibits then a little black point in the centre.

Acne, of course, occurs in those parts of the skin where oil-glands abound — on the face, neck, shoulders, etc.— and causes, besides the physical suffering attending it, a most forbidding and unsightly appearance, peculiarly distressing to persons of the age in whom it generally occurs. It is not often that it affects the general health, nor is it accompanied generally with defective health; on the contrary, it is found frequently in those whose vitality seems exuberant, but sometimes the irritation of the little pustules is so great as to give rise to a febrile condition, which even may require blood-letting. Excepting in such cases, Rochelle powders, small doses of Epsom salts, or the use of the waters of some of the springs of known aperient effect, will be sufficient to correct any irritability of the system. All these should be used gently, not in large and very active doses, taken at long intervals, but in small, mild ones, taken daily. A warm bath, at bed-time, is a useful and grateful assistant to the soothing effects of the internal remedies. Further than these, there is no more active course which it would be advisable for the patient to follow without better counsel; nor, indeed, is anything more of that kind generally necessary. It is, however, imperatively so, that the diet be most strictly and faithfully attended to; and, without this, we must again repeat — so important is it — no remedy can be expected to avail. All gross and stimulating food must be at once thoroughly and entirely rejected, and the diet limited to the plainest vegetable, or rather farinaceous, food; the patient abandoning animal matter, except milk, entirely — unless, as in some rare cases, a small quantity of meat may be absolutely necessary; in which event, the allowance should be as small as possible, and of lean though juicy meat. Fresh, ripe fruits should be freely used, and will often do away with the necessity for any aperient medicine. To allay the irritation, Rous-

sel's almond shaving-cream, thinned with water to the consistency of cream, or castile soap lather, laid on at night, will be found very useful. Bay rum, diluted with rose-water,\* is also highly beneficial, both in soothing the smarting and heat, and in stimulating the pimples to a proper formation of matter, and to an absorption of the hardened mass around.

There is another form of acne, still more troublesome, because more obstinate and persistent than the other. It is found most in those of middle age, or past it, and attacks the nose and neighboring parts, particularly the prominent parts of the cheek. This disease, in many instances, is brought on, and in all increased, by excesses in the use of stimulants, particularly alcoholic. Yet it is not so invariably the effect of intemperance as is generally supposed. We know of one very severe case, which seemed to have been produced by washing the face, when excessively heated, in very cold water; at least, it immediately followed the act, and persisted through the remainder of the gentleman's life, though his habits were remarkably regular and temperate. In this variety the formation of matter in the pimples is more tedious and protracted, and also more imperfect. The general treatment of the disease is much as that of the other kind.

#### SALT-RHEUM.

Salt-rheum is a popular name applied to several diseases of the skin, resembling each other possibly in some general points, but in other, and very essential ones, differing very greatly. This makes it difficult to say anything definite under

\* In using rose-water, care should be taken that it is properly made, by *distilling rose-leaves and water*; which yields distilled water, holding in suspension the oil of the rose-leaves, or attar of roses. A great deal that is now sold is simply a common and adulterated attar of rose, mixed with undistilled water; and this is often more hurtful than beneficial, particularly in diseases of the eyes.

this head; and yet we are desirous of doing so, from the great frequency of the use of the term, and the apparent frequency of some disease specified by it. The most common disease to which the name is applied is one known in scientific language as eczema. It makes its appearance in small, whitish pimples, often so minute as to escape detection by a casual observer. Around these is more or less inflammation, and the clusters vary in size, from that of a half-dozen pins' heads grouped together, to patches covering half of one of the limbs. It often appears on the hand, between the fingers, resembling itch so much in its aspect and behavior as to make it very difficult, in some cases, to distinguish between the two. The pimples, white at first, become yellowish, burst, and discharge a fluid, which dries upon the skin, and, after remaining there a few days, falls off, leaving a red, tender surface. This may go on for a week or two, and then disappear, but giving annoyance only from the itching that accompanies it. The disease may, however, assume a more violent form; so much so as to occasion most acute suffering—burning, stinging, and itching of the part affected, and high febrile excitement of the general system. Instead, too, of its drying up and gradually disappearing, as above described, often, when the first scales fall off, the surface beneath is left raw, discharging a thin, acrid fluid, and another small shiny point is seen getting ready to go through its phases, as the first.

To remedy this disease, or rather for "salt-rheum," there are dozens of popular nostrums; some undoubtedly of virtue, when applied to the proper disease, and at the proper time; but it is difficult for the inexperienced to discriminate on these important points, and without such discrimination the chance is equal of doing harm or good. Where the disease has been ascertained decidedly to be eczema, the following prescription—for which I am indebted to Dr. Durkee—may be found beneficial in allaying the itching and producing a quiet in the

part, very favorable to its restoration to a healthy condition, but, of course, will only be of service after the general symptoms have been allayed by proper treatment.

Take of emulsion of sweet almonds, eight ounces.

Glycerine, one ounce.

Sugar of lead, sixteen grains.

Mix these, and wet the part affected twice a day with the mixture. To this prescription, if the itching is very severe, two and a half drachms of hydrocyanic acid may be added.

To one form of eczema the name "Ring-worm" is sometimes applied; but, like the other popular names, it is also used to specify other diseases, one of which we will mention when we come to the treatment of diseases of the hair.

Forbidding and angry as eczema appears to be, it is not contagious, and therefore all anxiety on the subject of communicating it to others may be wholly laid aside; though, sometimes, where the discharge is very acrid, we have reason to think it may cause a slight and transient irritation on the skin of another which it has touched.

### ITCH.

The only remaining disease of the skin, to which we feel we can with any benefit give a place in this work, is the itch; not a very common one, possibly, yet sufficiently so to make it worth while to say a little about its nature and treatment, and sufficiently annoying, when once contracted, to make any good suggestions for its cure very acceptable to the sufferer.

Amidst the "diffusion of useful knowledge," the reader may be already aware that itch is produced by a little insect, which burrows under the skin, for the double purpose of providing itself with a home and maintenance. This insect has been described by several enthusiastic writers, who have probably never had the itch, except on the point of a needle and under a microscope, as very beautiful; and if adaptation to



use is, as some philosophers would have us believe, necessarily productive of beauty, the general form of the insect, and the shape and arrangement of its eight legs, must be called very beautiful. For a more particular and graphic description of the animal, we cannot do better than refer to Mr. Wilson, so often quoted: "It is sub-globular in form, about one seventieth of an inch in length; has a bright, shining coat, which reflects the light, and gives the animal the appearance of a minute bladder of water; eight legs, four in front, near the head, and four imperfect ones underneath its body, and a strong, tortoise-shaped head; indeed, altogether, it offers much the character of a tortoise, with its arched and convex back, and flat under-surface, and two large legs, each almost the size of the head, on either side of the latter; the resemblance, moreover, is increased by the manner in which the legs appear to project from the front border of the body. But here the likeness ceases, for the hinder legs scarcely show themselves beyond the outline of the body, and the creature runs with considerable rapidity, raising its body above the level of its head. The skin or shell of the animal is white, and beautifully ribbed, and the head and fore-legs are covered by a layer of reddish skin, like the horny case of the insect tribe. The back presents a number of projecting spines, and long, porcupine hairs, set on round tubercles; and similar hairs stand out in all directions from the different segments of the legs. On the hinder legs the hairs are very long, and trail behind in walking." Truly very beautiful!—a sharp head for entering with, strong arms to burrow with, and an effective arrangement of spines on the back, which, by their inclination to the rear, make good any lodgment effected. Placed upon the skin, the small suckers at the end of the fore-feet hold him firmly there, while the head is entered, and the body soon follows; the progress then becomes easy and rapid, continuing until a passage is forced to several times the length of the

individual. He then sets about making himself comfortable by enlarging his domicile. He may also become a family man, ambitious that his figure and habits should be perpetuated in youthful "Acari." These may occupy for a time the family mansion; but, in the mean while, the old one pushes on to supply himself with another, and so the colony thrives. But as all this is going on in and about the sensitive layer of the skin, it cannot be expected that the great animal, thus made a convenience of in furnishing a home and provender for the smaller, should not be made aware of it in some way or another. The visible sign of what is doing underneath is furnished by small watery pimples on the surface, which often, particularly when irritated by rubbing, become filled with matter, and, when broken, occasionally leave sores, made angry by the efforts to allay the itching. This latter symptom is not generally painfully violent, though it may become so in cases where the disease is neglected; and in such, occurring in children, it may seriously affect the whole system, from the persistence of the irritation, and from its destroying sleep.

The principle — for there is but one — on which to cure the disease, is very simple; — to kill the animal, or rather the animals — for so long as one is left of the thousands that may constitute the assaulting army, the attack will be renewed, and successfully. To do this, many prescriptions have been given, some of them of that class termed by polite practitioners "elegant;" but, if despatch and thoroughness is an object, all delicacy (so called) should be laid aside, and the work be undertaken with decision. The simplest remedy, and probably as good a one as any other, is the common sulphur ointment of the shops, to each pound of which some recommend adding a dram or two of carbonate of soda, or of potash. The *whole* person should be anointed with this at bed-time, rubbing it well in, so as to insinuate it into the little passages made by

the insect, without which it will not avail. It should be done, if in cold weather, in front of a fire. The quantity of ointment required for one inunction is about half a pound. When well anointed, clothe the person from head to foot in cast-off clothes, or wrap up in a sheet and go to bed. At the end of a dozen hours get into a warm bath, and, if the skin is not very delicate, use common brown soap in washing off. This process has been known to cure with one application, but generally some two or three are necessary. The clothes of the person, we need scarcely say, should be carefully disinfected, because, as long as they are not done so, and thoroughly, the disease has a chance of returning.

The only drawback to the use of the above remedy is to be found in the great delicacy of some skins. When thus rendered impracticable, sulphur-water baths and sulphur-vapor baths may be substituted for it; and, with children, Wilson recommends the application of camphor and musk rubbed together with olive oil, and applied as the other, or a wash of half an ounce of sulphuret of potash and a pint of water.

With this we conclude our list of those diseases of the skin which may be entrusted with safety, under some qualifications given, and with prospect of success in the treatment, to the patients themselves. But, in doing so, we must again refer to our remarks as to the importance of care of the general system, and of circumspection in the habits of life, particularly those pertaining to diet, exercise and bathing.

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## DISEASES OF THE HAIR AND ITS BULBS.

By the term disease, we here mean any departure from the natural and proper condition of the hair. Such may occur in regard to situation — it may grow where it ought not, and thus produce unseemliness; in regard to quantity, which may be

increased or diminished ; in regard to color — losing its natural hue, and blanching ; and, lastly, the bulbs may be affected with disorders, some of them amongst the most painful and repulsive which can affect any part of the system. Having considered these as far as practicable, we then will advise concerning the management of the hair, which we postpone just now, for a convenience that will probably be obvious.

HAIR IN UNUSUAL SITUATIONS. — As a freak of nature, hair is often found growing in various places, from discolored spots, called moles. These exist from birth, and may be of any size, from a line in diameter, giving growth to three or four hairs, to that of the hand, or, we know not why, larger. These are wholly unattended with any painful sensations, but may incidentally become very annoying in particular situations, such as when on the chin, where they are very troublesome in shaving. They are more or less unsightly ; and when very much so, it may be desirable to get rid of them. This can only be done by the knife — a simple operation, and one, under favorable circumstances, leaving no scar. It is, therefore, a consideration for the person alone as to whether the mole or the cut had better be endured. There is, we know, a very prevalent notion that they are liable to turn into cancers when meddled with ; but we have never seen or heard of an authenticated case in which it occurred. The error had its origin, probably, in the fact that certain tumors of the skin do occasionally develop into malignant affections.

The hair may sometimes extend beyond the limits of what is considered comely. Thus the two eyebrows may be blended into one uniform growth, or the forehead may be lessened in height by the hair of the scalp extending too far down upon it. For such deformities, as the advertisements strongly call them, many depilatory powders and lotions are offered. These can only act by chemically destroying so much of the hair as is protruded beyond the surface of the skin. That which is still

within the tube of the bulb, and the bulb itself, is unaffected by them, unless their action is very violent. and, of course, to a greater or less degree, from this circumstance, dangerous. The consequence is, it soon reappears, and, in fact, the agent does nothing more than a razor would do, but does it not half so safely. These preparations, too, besides containing quicklime and other simply acrid substances, often have arsenic in composition, rendering them, in addition to their harshness of action, and liability by it to do local mischief, and engender disease in the part, apt to cause constitutional trouble of greater or less amount.

In such cases, we would earnestly recommend the individual to coolly consider whether the deformity is really as great as is imagined. A very important step as a beginning, — for a reference to others will show that very often certain peculiarities which in the abstract might be considered as blemishes, in the actual harmonizing with the general style of feature, complexion, etc., are not only not detrimental, but are really effective in producing an agreeable ensemble. The anecdote should be recalled of the painter, who, desirous of producing with his brush a faultless female face, selected for his model's the most beautiful individual features that he could ; the eyes from one, the nose from another, the mouth from a third, and so forth ; but the portrait, when finished, was sadly deficient in every trace of beauty. If, however, such consideration does not lessen the impression that an imperfection is to be removed, and a razor is considered an unfit implement in removing it, tweezers should be preferred to the *nostrums* above mentioned ; and, with diligence and patience, the hair may be for the time gotten rid of, and for a longer time than by any other means ; for all that is as yet formed is drawn out, while the others merely take that which is beyond the surface. It must be remembered, however, that the manufacture of the hair is uninterrupted ; the bulb that forms it still remains, and

this cannot be destroyed without also destroying the skin in or beneath which it is implanted.

TOO GREAT PROFUSION OF HAIR, or extraordinary thickness and rapidity of its growth, can scarcely be called disease; though, were we to believe all the marvellous tales that are told of instances of this peculiarity, we would have reason to consider it so, and even a dangerous one; for, among the old legends of this sort, is one of a lady, whose beautiful tresses, the admiration and pride of herself and family, the wonder of her country, became the cause of her death. They grew with such marvellous rapidity, and so thick, that they expended all her vital powers, and she waxed wan and feeble as they waxed darker and longer, and richer in gloss, until she was consumed in nourishing them. Without believing all this, which, however, is told by an old writer with great gravity and earnestness, we can believe, and indeed have seen instances in which the hair, by its great thickness, and the warmth it created, has caused much discomfort, particularly in the way of headache, and, indirectly, disorder of the general system. The remedy is a very simple one, thinning it out with scissors; that is, inserting the points of the scissors to the roots of the hair, and cutting off a dozen or so, here and there, all over the head.

DEFICIENCY OF HAIR. — The condition of the hair, which, with possibly the exception of its loss of color, is of most care to persons, and for which remedies are most anxiously sought, is where it becomes deficient in quantity.

Through all ages the hair has been considered one of the chiefest graces of the person, the source of comeliness to man, and of "glory" to woman. Among the earliest nations, sacred as well as profane, it entered largely into rites devotional, political and social. Its length, the style in which it should be worn, and the ornaments that might be used with it, were all, by laws divine and human, presented to each individual according to sex and station; and that it should be

shorn or left unshorn, under certain circumstances,—that under others it should be sacrificed, and the manner in which this should be done,—were also directed by laws equally stringent and particular. It has been, therefore, from various motives, beginning with those of the highest devotional character, down to such as arise simply from a desire for personal comeliness, always an object of care and solicitude; and for the fostering of its growth, the increase of its beauty, and the preservation of its luxuriance, ingenuity seems to have been taxed from the earliest times of which we have record, down to the present day.

It is, then, to the supply of no new want, engendered “in these effeminate days,” that we address ourselves, in attempting to explain the causes of deficiency of hair, and furnish a remedy for it. In doing so, we but take the place, for this day, of Egyptian priests, of Spartan nurses, of Roman augurs, of mediæval leeches, and of French *cosmeticiens*; trusting that, in assuming for ourself the place usurped by the last, we may be able to offer remedies more consistent with enlightened reason and with true science than the nostrums with which they attempt, indiscriminately, to attack all the affections in question.

The first step in our essay should be to discriminate between the conditions in which deficiency of the hair, or baldness, occurs. These are chiefly two; and though one of them may pass into the other, yet, until that change is effected, a very different course must be pursued from what would be expedient if the second condition obtained. In the one, the bulb or gland forming the hair has simply become weakened, is unable to perform its function actively and efficiently. The effect of this is, first, to permit the hair to fall out, or to be easily pulled out, as in combing the head. Next, instead of replacing the fallen hair with another of the same color, thickness and rapidity of growth, as its predecessor, the one that follows



is often smaller in diameter, paler in color, grows very slowly, and is also easily pulled out. This is the condition which so frequently follows fevers and some other diseases producing great depression of the vital powers, and also violent mental emotion having a similar general influence. It may also be induced by purely local causes, among the most common of which we consider the hat as at present worn by men. The influence of this is to keep the head too hot, and, of course, to unduly increase the elimination of perspiration from its surface; and, as another evil, to keep the head surrounded with this secretion as long as the hat is on, and even for some time after its removal. This, we feel confident, is an explanation to the question so often asked, as to why baldness is so much more common now, and occurs in men so much younger, than formerly. It is confirmed, too, by observing the different conditions of persons as to the growth of their hair, in various occupations, which may require the more or less constant use or disuse of covering for the head. It will be found that among these, in proportion that the head is left uncovered, provided it is not exposed to other adverse influences, the growth of the hair is thicker and endures longer. With the ancient Romans the head was seldom covered, except in actual flight by the helmet, and with them baldness was of great rarity; so much so, as to make it a disagreeable cause of distinction and to render Cæsar's laurel-crown scarce more valuable as the need of a conqueror, than as a concealment of this defect.

Women are supplied with a thicker layer of fatty matter in the scalp, which, if not especially intended for that purpose, at least serves, among others, to furnish their tresses with a richer nourishment, and, continuing longer than the same matter in men, preserves for them its decoration much later in life; and yet in this sex the same remark has been made as to the scantiness of the hair, and the early age at which the defect commences, earlier even than in men. That this must be the effect



of something else than natural causes, the provision just mentioned will show; in addition to which, we have another, in the fact that the thinning and baldness in women does not always first show itself, where the fat is first absorbed, on the top of the head; but as often it is seen at the sides. For this, too, an explanation seems apparent, in the habitual treatment of the hair with cosmetics — particularly greasy substances perfumed with essential oils — and in the style generally prevalent in dressing it. The injurious effects of cosmetics are three-fold: they clog the hair, and make it very compact, so that, like a man's hat, it increases the perspiration of the scalp, and yet does not permit its escape; they directly, by the nature of the perfume, more or less unhealthily stimulate or irritate the delicate hair-bulbs; and, lastly, they prevent the thorough cleansing of the skin, so necessary to the preservation of its ability to perform its duties properly and efficiently. The style of dressing the hair to which we allude is that in which it is drawn very tightly, not only making it too compact, and increasing the effects just mentioned, but actually drawing out by the roots a greater or less quantity, every time the hair is dressed; and, indeed, every time it is subjected to any violence, however gentle, as in putting on and taking off the bonnet. This particular source of the thinness of hair over certain parts of the scalp in women seems well understood by them, and we have often heard the remark, "I must part my hair in a new place; it is getting too thin." The more sensible way would be, not to part it in a new place and merely remove to it the difficulty, but to dress the hair in a different manner; but of this more presently. Our object just now is to show that there is one kind of baldness dependent simply upon a weakened state of the hair-glands; an imperfect formative force, a defect in the manufacturing apparatus, dependent upon certain causes that may be removed; general debility following some bodily or mental disease,

wearing close, air-retaining hats, using greasy stimulating cosmetics, arranging it too compactly, drawing it too tightly, and thus mechanically thinning it out.

The remedy for this kind of baldness, when the cause of it is understood, will, in the majority of instances, be apparent : namely, laying aside the practices which have led to it, and resorting to proper means of taking care of the hair, to be presently given. If the source of the defect, however, is in the debility produced by disease, or if, under the other prejudicial influences just mentioned, though the cause may have ceased, the hair-glands still remain feeble and inefficient, it may be necessary to resort to some direct appliances to bring back their natural strength and ability. The most simple, and yet most efficient, of these is friction to the scalp, using for the purpose an old soft tooth-brush, or one of which the bristles have been softened by soaking in boiling water. The shape of the instrument adapts it to be inserted readily and effectually between the hair, where it should be pushed back and forth over the space of an inch or so at a time. It does not, either, draw upon the hair as an ordinary hair-brush would, were we to use it for the purpose ; for, though the latter, if properly managed, would answer the same end, in stimulating the glands to form better and stronger hair, yet, before this might be done, all of that already on the head, and which has but a frail tenure upon the skin, would be drawn out. In addition to the friction, which should be used once or twice a day, the head may be showered once a day with cold water, carefully drying it with soft spongy towels, rather by pressing them upon it than by rubbing it with them, which would have the same effect as the use of a large hair-brush. If this is resorted to, the friction had better be used directly after the shower, as it will then assist in bringing back warmth to the head, and promote the drying of the hair. With women wearing their hair long, the showering will be more or less

inconvenient ; and yet it need not be so much so as to deprive them of the benefits of it, which we believe to be great. The chief tax is upon the patience in drying it, but, after a little time, practice will give great readiness in this, as far as art can do it ; particularly if these directions are followed. First, separate the wet tresses very carefully, and, holding them with one hand near the roots, so as to prevent any strain upon them in the other parts of the process, with the other hand envelop them in a soft towel, and press them firmly in its folds from the roots towards the extremities. This, properly done, will remove all the free water ; and then, to dry them thoroughly, separate the hair into as small strands as possible, and sit with it thrown over the back of a chair. This, of course, will take time and patience, as we have just said ; but it is the best way under the circumstances, and the time need not be lost, for it is still available for reading, or some kinds of work.

As a stimulus and tonic to the hair-glands in the state of debility just described, several compounds have been advised, most possessing greater or less merit ; none scarcely without some objection to them, in the damage they are liable to do from over-exciting the organs they are intended to benefit. We have recommended, with evident, and we might almost say, striking success, for this purpose, the French perfume commonly known as Amber Lavender, directing the roots of the hair to be washed with it once a day. It has long since been noticed that surfaces frequently blistered furnish, for some time subsequent, a thicker growth of hair than before. Dupuytren, the celebrated French surgeon, availing himself of this suggestion, prescribed with success a pomatum made of blistering ointment mixed with hog's lard, — a dirty and clumsy preparation, as the powder of the flies is liable to accumulate about the roots of the hair. We have substituted for it a pomatum made by rubbing a drachm of the tincture

of flies with an ounce and a half or two ounces, according to the delicacy of the skin, of fresh lard. Mr. Wilson gives two prescriptions, in which the same agent is introduced, each of which seems neater and more convenient ; — they are as follows :

Vinegar of cantharides, half an ounce.

Cologne-water, one ounce.

Rose-water, one ounce.

The other :

Cologne-water, two ounces.

Tincture of cantharides, half an ounce.

Oil of nutmegs, half a drachm.

Oil of lavender, ten drops.

These should be rubbed in with a soft tooth-brush ; and, if found too irritating, must be diluted with rose-water, or used in smaller quantities. This may seem a very poverty-stricken array of remedies, where so many things have been suggested ; but it is, in truth, all that we have to offer — that is, all that a knowledge of the wants of the case, and of the influence of such agents, will permit us to present with a hope of benefit, and without fear of doing mischief ; and even that the last clause may hold good with reference to the preparations just given, we must again advise care that over-stimulus is not produced by their too free use.

We have said nothing yet of cutting the hair, or shaving the head. This has been much mooted, and deserves separate consideration. The advantages and disadvantages can, however, we conceive, be readily summed up. Of disadvantage, we know none, save that of appearance, unless it be in the use after it of a too heating wig, and prolonging the use of this succeedancum too much — a very frequent error, and one likely to have an injurious effect upon the newly-coming hair beneath it, cutting it off from the healthful and invigorating influences of light and air. The advantages of shaving the head are

direct, in stimulating the hair-glands, an effect exhibited on the chin, in the beard becoming thicker and stronger; and indirect, in affording greater convenience in the application of the various tonic and stimulative remedies — frictions, showerings, lotions, etc. This we conceive to be the whole length and breadth of the question whether the head should be shaved or not; and it must on these grounds be answered by the circumstances in each individual case. If the hair only moderately falls, and a tolerable suit can be preserved until the general health of the scalp is restored, it is not worth while to remove what is left; but if it is greatly thinned out, and the prospect is that much time will elapse, and much labor have to be expended, before a comely growth can be induced, it would answer all ends better to remove the little remaining, and obtain a fairer chance, and more convenience, in applying the means of bringing back a general restoration of the hair.

SENILE BALDNESS. — The loss of hair, which has occupied us as yet, we have described as proceeding from an enfeebled state of the hair-gland produced by some accidental cause, which may, under favorable circumstances, be removed, enabling the organ to return to its healthy state, and again furnish a vigorous growth. There is another source of baldness, however, which is not so easily remedied. It is that in which the hair-gland is entirely absorbed, never again to be replaced. This is what takes place from the effects of time, sooner or later, with all; and *may take place from a continuance of the condition of debility above described.* The period of life at which it occurs varies with different individuals. Without any defect in the general health, it commences in some as early as twenty-five, but may, in others, be postponed for eighty winters. The disposition to it at particular ages must be remarked by all as a family trait; and the individuals who are predisposed to it at an early age are generally characterized by a prolongation of the smooth skin of the forehead,

running up between the hair of the temple and that of the top of the scalp. This space gradually increases, while the hair also thins off from the top of the head, until often but a little fringe is left on each side and behind.

After this slight sketch of the natural history of this kind of baldness, the reader, possibly, is in expectaney of some infallible and ready remedy for it, — for some grand achievement of science over and above, and more excellent than, the hundred nostrums which quackery is ever holding out, with such challenges to our admiration, with such draughts upon our credulity. We have, however, none to offer. Science as yet has proved powerless against time and nature, where the integrity of hair-glands is the subject of contest. There is no resisting the one, or thwarting the other; there is no cure for senile baldness — for by such name this is called, whether it occur in the young beau of twenty-five, or in the decrepid octogenarian. This statement we make without qualification, in spite of the wonderful instances so often given of a return of the hair, under the wholesome influence of some compound with a name beginning or ending in “Trio.” If the hair is restored, it may be set down as certain that the glands were only enfeebled, and wanted proper stimulus to enable them to perform their duty. But even these instances of restoration of the hair cannot always be depended upon. We have had many friends who, imagining themselves illy treated by Time, have, under fond hopes of staying the effects of his over-officious hand laid too heavily, though probably, in reality, patronizingly, upon their heads, put themselves under care of hair-renovators, and for a little while have exulted in a soft down, or even genuine “locks,” supplied from a recently smooth spot. It has ever proved delusive. The flattering appearance was but the last effort, — the dying rally of the hair-bulbs, — which only subjected them the sooner and more perfectly to the destructive cause at work upon them. We

have examined carefully many of these cases, and, however flattering they may have seemed at first, we have never seen one where permanent good was effected. Much trouble would be spared, and much time saved, were the circumstance at once gracefully submitted to; not neglecting, however, that care of the head which should be habitual with all of each sex, and for which we will presently give more particular directions.\*

We ought not to conclude these remarks without a word or two of advice upon choosing and wearing of wigs. Scratches, as they are called, — small patches of wig to cover limited spots of baldness, — should never be used. If they are, it will be invariably found that the spot will, more or less rapidly, increase in size. They induce, by their weight and warmth, debility in the hair-glands around, and thus magnify the original evil. If a whole wig is considered indispensable, it should be as light as possible, and of open work, so that the perspiration may freely escape from the surface of the scalp. It should be adjusted too without springs, if possible; as these often compress veins, and bring on feelings of great discomfort in the head. Where wig or no wig is not a question of appear-

\* In reviewing these pages, we cannot but be impressed with the amount of humbug that has been put off upon the public in the form of advertisements of nostrums for making the hair grow, and with the readiness with which the public habitually swallows it. We remember a Neapolitan pomatum, in rubbing in which, the directions advised the hands should be covered with gloves, or it might give rise to an inconvenient growth of hair on the palms. Another was of a powder, which was to be mixed with the fat of such an animal as had hair of the color desired, and it would produce a similar growth. Whether the gentleman who, by mistake, mixed it with goose-grease, brought out a crop of feathers in the place of whiskers, we have not heard. But, without going so far, we have amongst us one, at least, who, by a preparation of his own discovery, can make hair grow on a piece of dead man's scalp; and has done it, several times, our friends inform us. A suggestion: If not a too costly preparation, why should it not serve to convert our cast-off "white kids" of one winter into fur gloves for the next, or to repair the damage that moths do to our sables?



ances, but one solely of comfort, which we suppose it always is with the aged, we should recommend a velvet or a satin cap as a much better protector against cold, and much more convenient and cleanly than the other. A light cotton under-cap should be worn next the skin, removing it every two or three days, and replacing it with a clean one, thus getting rid of a great deal of greasy matter of perspiration which would otherwise get into the cap.

LOSS OF COLOR IN THE HAIR. — This, like the last described species of baldness, may be the effect of time alone, and may also, like it, occur at a very much earlier age with some than with others. It may, too, like the first described — thinning of the hair — proceed from an accidental debility of the glands, preventing them from secreting as much coloring matter as they should. There are but two methods of treating it — the one to restore, if possible, the strength of the glands; the other to let them alone, and simply dye the altered hair. We confess the possibility of the first attempt is not frequent; for, although the glands may be stimulated, and permanently, too, up to a point at which they will furnish a good thick crop of hair, yet their faculty for supplying coloring matter does not seem so impressible, and the instance may not unfrequently be seen of a young person with a full and luxuriant head of hair, which has lost irrecoverably its color, after severe sickness, or some other such impression.

In the majority of cases, then, if it is considered desirable to remedy the loss of color in the hair, resort must be had to dyes. These, contrary to an impression which we find largely prevalent, can only tinge the hair already above the surface; and, whatever may be the boasted virtues of certain nostrums, none can possibly act deeper. The very next portion of hair that grows will, nay, must possess the original defect of color. This should be distinctly understood before commencing a process, which, troublesome in itself, to say the least, re-



quires to be repeated at short intervals if the effect is to be kept up. Great must be the deformity produced by gray hairs, to make it worth the while to resort to so imperfect and troublesome a process to dye them. Beside these objections to the use of dyes, there is another much stronger in the irritating influence they often exert on the hair-glands; enfeebling them in their action—so much so, frequently, as to add baldness to the original defect. Some have even among their ingredients agents of a nature and power which may be felt, after a prolonged use of them, by the system at large.

We give the following recipes for hair-dyes, as the least hurtful ones, and yet doing their work well :

No. 1. Take of quick-lime, exposed to the action of the air until it becomes pulverized, two parts, and of carbonate of lead, one part.

No. 2. Acetate of lead, two parts ; carbonate of lime, three parts ; pulverized quick-lime, four parts.

No. 3. Sugar of lead, one drachm ; lac sulphur, two drachms ; rose-water, four ounces.

The first two are powders, and, when applied, should be made into a paste with water, and spread over the hair with a fine brush. When the hair is well saturated, cover the head with a silk cap. At the expiration of four or six hours, wash the hair so as to remove the preparation employed. These two furnish a dark brown tint.\* No. 3 goes by the name of one of our distinguished army officers, who is said to have changed, by its use, a full suit of hair, as white as the peaks of Orizaba, into a dark one. It is to be rubbed on the scalp with an old tooth-brush ; at first, once a day, but afterwards less frequently. It has a good deal of efficacy, though not always so successful as it is boasted to be. Upon asking a lady, who had very fairly experimented with it, for directions how to use it, etc., telling her the object of our inquiries, she begged us to warn every one against it, as a filthy, offensively-

\* From Cazenave on the hair, a high French authority.

smelling compound, staining the skin, nails, and, indeed, almost everything it touches. She showed us, at the same time, her rings, which after a year's disuse by her of the article, still retained marks of its effects upon them. We believe that, in saying this, we comply fully with her request, which was evidently made in the generous hope of saving others from annoyances that she had experienced.

Dyes are not, however, used solely for the purpose of restoring the previous color of the hair, but they are frequently resorted to with a view of altering tints of hair not considered becoming, particularly those in which a red hue predominates. For this absurd resort, we have but a few decisive words. The color of the hair is not a sole peculiarity in such cases, but it is always accompanied by a certain kind of skin; that is, one of a particular color and texture, which can produce nothing but reddish hair. The eyes are also colored to match, and, in fact, the red hair is but one item in a harmonious ensemble, which is utterly ruined by altering only that item; the harmony is destroyed, and whatever grace may have been derived from that lost. The deception can never be very great; for, if the observer does not at once detect the incongruousness of a dark poll and fair or freckled face, the tints at the roots of the hair, made brighter by contrast, will in a few days expose the fraud. The hebdomadal phases of persons who follow the practice of dying their locks are really very amusing; — "From red to black, from black to dingy gray." The other objection to the use of dyes — that they are liable to excite disease at the roots of the hair — also applies here. Therefore, though some colors may be preferred to others, it is better to leave the tinting as done by Nature's hand, than to run the risk of destroying the harmony of her hues, and of adding baldness to the already existing — so supposed — blemish.

DISEASES OF THE HAIR-GLANDS. — The scalp is more or

less liable to participate with the skin generally in most of the diseases that may affect it; but, besides these, it has some peculiar to it. They are mostly of such a nature as to require much tact and judgment on the part of the physician, and much care on the part of the patient. It is not, therefore, our intention to offer any rules for treating them here, but to impress upon the reader the necessity, upon the appearance of any disease amongst the hair, to place himself at once under care of some one skilled in such matters. The reason why we consider this as especially important is, that hundreds of nostrums are sold as infallible cures for scald-head, ring-worm, salt-rheum, etc.; and, supplied as they are with recommendations ostensibly of the strongest kind, they are eagerly sought and used by the patient, he trusting entirely to his own judgment to discriminate for him, as to which of these affections he has. In the mean time the disease is at work, and, before the truth may make itself apparent, the hair may, to greater or less extent, be irremediably destroyed. The worst of these diseases is that called *FAVUS* — characterized by a secretion, at the roots of the hair, of a yellow fluid, which soon oozes out, and hardens into crusts. These gradually increase in size and number, putting the scalp into a most unsightly and disgusting condition, and ultimately destroying, if neglected, all the hair on the affected region. This is true ring-worm, differing much from the eczema, to which that name is often given, and requiring very different treatment. A peculiarity of *Favus*, which should be particularly mentioned, is, that it is eminently contagious, liable to be propagated by the comb, brush, and even towels, used by those affected, whilst the other disease is not.

Dandruff is considered by many as a disease; and so it may be when very greatly increased in quantity. It is, however, nothing more than the scales of scarf-skin, which are so plenty in the hair, because, besides the outer surface of the skin to

supply them, the tube of each hair-gland is lined with scarf-skin, and these linings are constantly undergoing, like the same material elsewhere, the process of being thrown off. The proper remedy for dandruff is to strengthen generally the scalp and hair-glands, and wash the head once or twice a week in soap and water.

THE CARE OF THE HAIR. — We have delayed, until now, to say anything about the general care of the hair, because we have thought that the reader would be better able to appreciate the value of the directions given under this head, after reading what has gone before, and after seeing more clearly the nature of the evils which it is purposed to avoid in bringing common sense and reason, not to say anything of science, to bear upon hair-dressing. After what we have hitherto said concerning the importance of the general health of the body, and of the especial health of the skin, and as the means of attaining these apply equally well to the care of the scalp, we need only give such directions as are necessary for the peculiar wants of the hair. Cleanliness here, as in all other cases, is of the first importance. With the hair it is to be attained, first, by the comb — one with very fine teeth; and next, by the brush — each of which should be used at least once a day. It may seem strange, at first, to have to give directions how these very familiar implements should be managed; but it is the fact that though few amongst us are unable “to make one hand wash the other,” there are many who do not know how to comb their heads; and, in their ignorance, they frequently do much damage to a fine and healthy suit of hair. The common fault is, that the points of the teeth are carried down to the scalp, and are there pushed along, ploughing in among the hair-glands, to their evident detriment. This, French coiffeurs — many of whom have really very sound knowledge of, and great skill in their art — have long been aware of, and often give caution against. If the object be to cleanse the scalp,

a comb is not the proper instrument. It is only suited for removing the foreign bodies, whether they be scales of scarf-skin, dust, or lamp-black, that are attached to the sides of the hair, and to improve its "lay." To do this, it should be inserted to the roots of the hair as nearly parallel with the scalp as possible, and then drawn gently along the full length of the lock, which, if long and thick, should be held by the other hand, between the comb and the roots, when the former is sufficiently distant from the head, in order to prevent any strain upon the latter. In this way it does its work very effectually, and does not injure the glands. To smooth the hair, and put it into proper position, it may have to be carried along perpendicular to the surface, but this can be done without pressing it in too much. For the same reasons, the brush should not be used too forcibly, or with too much pressure.

To cleanse the hair, there is nothing better than soap and water, following the same directions given elsewhere for the use of these articles. The soap, of course, should be mild, and well and plentifully rubbed in, and afterwards thoroughly removed with an abundance of water. The frequency with which this process should be repeated will depend upon the individual; — persons with light, thin and dry hair will require it more seldom than those with thick, greasy hair, or who perspire very freely. Once a week could scarcely be deemed too troublesome, when the object in view is considered; and this may serve with most, though those in whom the last-mentioned qualities of hair are very marked, would benefit by a more frequent resort to it.

There is a popular impression, though we know not to what extent, that water rots the hair, and its too frequent use makes it harsh and coarse. A word in answer to this. Principles must never be adduced from solitary or occasional cases, which may be deceptive. The finest suits of hair we have ever seen were those whose possessors had a coral reef for

their dressing-room, and the Indian Ocean for a wash-basin, and used these daily.

Against pomades and such preparations we would not make unqualified opposition, yet we strongly recommend that they should be used as sparingly as possible, and only when necessary on account of some real imperfection of the hair, such as a roughness or too great dryness of it. Some imagine the roots require frequent anointing, that the hair may grow more freely. This is a great mistake; cleanliness will do all that is wanted there, and clogging up the pores with grease is not the way to promote a healthy condition of the scalp and its appendage. As to "Bandoline,"—a sticky liquid made of gum tragacanth, and used to make the hair lay smooth and look shiny,—it is a dirty, clumsy compound, and should be entirely discarded. If the hair is so unruly, or of the "Trad-dles" order, as to require that it should be glued down to make it submit to a certain style, surely a lady's taste and ingenuity could contrive some other way of dressing it, in which this quality will be of no disadvantage, and thus save her head from becoming a receptacle for sour paste.

As materials for pomatum, beef-marrow and bear's-grease have been highly extolled, and are really very good when fresh, but both, as they grow old, become gummy. So far as an absence of this defect is concerned, the purest sperm oil has an advantage over everything else; a fact well known to machinists, who use it, on that account, almost exclusively for their machinery. We see no reason why its odor might not be perfectly counteracted, or at least as much so as that of the castor-oil that enters into the composition of many hair "fluids." The best form for using any unctuous substance is to have it mixed with some liquid. This enables it to be more easily distributed through the hair, and makes it, besides, more convenient to apply. A very familiar and excellent preparation is made by gradually adding to white brandy as

much castor-oil as it can hold in suspension ; afterwards adding a slight surplus, and neutralizing this last with ammonia-water. As small an amount of any favorite perfume as will overpower the castor-oil odor will complete the compound. This is the staple of many preparations which are sold, under different names, as wonderful restorers and beautifiers of the hair.

The previous remarks apply almost equally to either sex. To men we have nothing more to say, unless we were to enlarge upon what we have already hinted — the injurious effects of the graceless hat which is now worn by them, keeping the head steamed all the time in its own excretions, and offending the laws of hygiene as much as it does those of taste.\* To the other sex we trust we may be permitted to give a little advice upon the style of dressing the hair ; for, to errors in this we consider is due the frequency of baldness among them, and the early age and unusual parts of the head at which it appears.

The first of these errors is yielding themselves up so utterly to the laws of fashion as to retain no disposition to discriminate how the hair should be worn in their individual case. Were a reservation made on this point, besides saving them often from the deformity caused by a style wholly unsuited to the form and character of their features, they would not resort to so many artifices and appliances, often very hurtful, as we

\* We Americans have certainly made the most of the hat, and shown an ingenuity fully equal to that of the inventor of it. Whilst its capabilities for anything but a head-covering have never suggested themselves to the French, we use it as a receptacle for gloves, handkerchiefs, newspapers, memorandum-books, or anything, in fact, that can be gotten into it. We knew one old gentleman, of large fortune and single-blessedness, who, for forty years, carried home his diurnal mutton-chop in it ; the complementary potatoes, three in number, occupying his coat-pocket.



have shown, to bring their hair up to the arbitrary standard. Thus, one with crinkled hair would not be daubing it with grease, or plastering it with gum, to make it lie straight; nor one with straight hair have it dried and made lustreless by burning, because the fashion required curls. Each, with proper independence, would consult the availabilities of her hair, and, exercising her taste, — an attribute seldom now consulted in such matters, — would dress it in such a style as would harmonize with her features and person. Pomade-pots, bottles of bandoline, and curling-tongs, might then be dispensed with; and we should be saved from seeing a short, broad face, pleasing from expression, if not from feature, exaggerated into a caricature, because fashion requires that a three-inch “puff” should be worn each side of it; or, at another time, a long one literally heightened into a deformity, because, by a similar requirement, the hair must be taken from the sides of it, and piled on top.

However it be worn, there should be no strain upon the roots, either in the act of “doing” it up, or when done up. To this strain is owing that so many women, and young ones, too, are bald on the sides of the head — the very last place, if ever, that Nature makes them so. With some, from the same cause, the top of the head, where the “partings” come, is often not only destitute of hair, but even the hair-glands themselves are destroyed, long before middle age has arrived. We have already spoken of the evils of dressing the hair too closely, making it too compact, so as to heat the head, and running the risk, by that means, of impairing the health of the hair-glands, and inducing early baldness, or loss of color. These, we think, are sufficient suggestions on this subject; and though, in giving them, we have all along been fully aware that we were trenching upon a province under a rule somewhat despotie, and jealous of any interference in its sway, we have not hesitated to speak, even dietatorially, where we



were assured that we had the well-tested laws of physiology and hygiene to back us.

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## THE TEETH.

THE importance of the teeth, and, of course, of their preservation in good and sound condition, though it has, probably, forced itself upon all, in some bearing or other, is appreciated by few in its full length and breadth. Some seem to consider them only as ornaments; others take a purely utilitarian view, in regarding them solely as food-grinders — ignoring their other functions, and being unaware of the influence that they may have upon the general health.

The lowest value of the teeth is, undoubtedly, that they possess as ornaments; but this we do not consider trifling. We do not hold at so small a price the image with which our Creator has stamped us, as to make us careless of preserving it, particularly if the means of doing so are those which reference to other important principles would equally induce us to use.

The next value they possess is as auxiliaries to the organs of voice; and the influence of defective teeth upon enunciation is too well known to require more on this head.

Their use as masticators is a very obvious one, yet habits so frequent among us as to be deemed, by some, a national characteristic, have greatly discarded them in this capacity; and the impunity with which this is done by many, for the first half of their life, has made them shut their eyes to the possibility that a time may come when the stomach will rebel against doing double duty, and refuse to do even its own proper share, if the teeth have not first done theirs. The fact is, that that part of the function of digestion — itself a group

of many functions—accomplished between the lips and throat, is a very important one, and does not consist simply of mastication, though this is a necessary portion of it, and one without which the others would be imperfectly performed.

This duty of the teeth is to so divide the food that the gastric juice in the stomach may more readily act upon it, and, as an assistant in this, the saliva is freely poured out to keep the mass in a soft, pulpy, and more soluble condition. How different is the same aliment introduced into the stomach without such preparation, when the gastric juice has to attack it in all its original density—a condition best suited to enable it to resist the impression of any solvent! \*

Nor should we either omit to mention an influence of the food which commences from the moment of its contact with the tongue, is repeated every time the teeth in their grinding action present a fresh layer to that organ, and is continued until it leaves the mouth. We know that the effect of some poisons merely laid upon the tongue is almost instantaneous to harm and destroy;—may we not, then, conclude that while the food is in similar contact, gentler and kinder influences, in the absorption of its more subtle parts, suited for the recreation of our finer organs, are likewise set to work, most of which would be lost, unless for the delay in mastication, and for the minute division in which the aliment is presented to the tongue?

\* We have acted upon the suggestion given us by the way in which the saliva is incorporated with the food, in many cases requiring the use of vinous or alcoholic stimulus, and with great advantage. In many such cases, if the stimulus be taken at once, or even by the mouthful at a time, its local effect upon the stomach is very unpleasant, and even injurious. We have found, however, that by directing that it should be sipped and chewed up with the food already in the mouth, all unpleasant consequences are avoided, and the tonic effect retained.

Another reason for preserving the teeth in a sound and healthy condition, were not the above sufficient, is found in the exceedingly prejudicial effects exerted by them, when in an opposite condition, upon the general system — effects, we believe, not fully appreciated by physicians generally, and scarcely suspected by those out of the profession. The common supposition is that the evils of defective teeth are limited to a loss of their use, an offensive breath, and pain; and that if the first is not particularly felt, if the second be counteracted, and the third endured, there is nothing more needed. Our experience has convinced us, however, that, beyond these, there is an irritation excited upon the nerves in almost every case of defective teeth; which, in some instances, is destructive in the extreme to the nervous equilibrium of the individual, and which often involves in the ruin of this the health of the whole system. This is very strong language, but not more so than we think the subject demands, or than what observation and experience will, we are confident, confirm. We give two cases supporting our remarks, — enough for illustration; our note-book, and those of our medical brethren, we doubt not, could furnish many more. We were consulted by a lady for a neuralgic affection which had been increasing upon her for several months, and had now become almost insupportable. Her description of it was very graphic. About noon every day a sensation of heat commenced at a small spot on the top of the head, and gradually increased until it appeared as if red-hot wires radiated thence to every part of the head, going down to the jaw, and meeting on the front of the chin. On expressing an opinion that the teeth were at fault, she was positive they had nothing to do with it, as none of the pain was referable to them, nor had she even toothache. Examining them, they were, nevertheless, found so defective, that treatment was absolutely refused until the teeth were put into good order. We did not hear from this patient for six

months, when we found that the services of a dentist, the day after we saw her, had entirely superseded the necessity for other treatment.

The other case came from a distance, and her previous medical attendant stated that he attributed her symptoms to a wound in the heel from a nail received some five months before. She was perfectly pale, and emaciated to a great degree. Every day she was attacked with pains, which, commencing in the cheek-bones and eyebrows, passed to the back of the head, and down the spine to the heel which had been wounded, but which was now apparently well. These paroxysms, resembling tetanus in many particulars, and, indeed, considered as a chronic though rare form of that disease, by her former physician, were very severe, and, resisting all treatment, threatened to speedily exhaust her powers of life. The appearance of the teeth attracted our attention, and it was made a necessary condition in the treatment that a dentist should be consulted. Thirteen were drawn — all either decayed or ulcerated at the roots; and, from that moment, the very same remedies, iron and gentian, which had previously been without efficacy, seemed to do their work in enriching the blood, and giving tone to the system — speedily removing every evidence of disease.

As we have said above, these are but two of many such cases that we might relate. What we want more particularly to illustrate by them is the influence of bad teeth upon the condition of the nervous system in general, and the health at large. In neither of them was there any reference of the pain to the teeth. In the first, the patient was perfectly incredulous, when they were suspected; and, in the last, the medical attendant, as well as the patient, could not realize that they should be instrumental in causing paroxysms of lock-jaw, and more suffering in the spine and heel than elsewhere. Now, be it understood, we do not mean to say that,

in these, the teeth alone were at fault. In the first, there was, in all probability, some temporary depression in the system, which, *together* with the state of teeth, produced the trouble; but, getting rid of one of the hurtful influences, the system was enabled of itself to throw off the other. In the last, the affection was still more severe, the wound of the heel, the teeth, and other causes, making up a total which no remedies could master; — taking away one hurtful agent, the treatment could overcome the others.

Bad teeth are liable also to affect the gums more or less, keeping up a continual irritation upon them, and either rendering them spongy and tender, or actually causing ulcers on them. Nor is this all; when the body of the tooth is decayed, it is likely to convey inflammation to the roots. These, wedged firmly in their sockets, have no room for expansion, but, in the engorged state of the vessels surrounding them, cause most exquisite pain, and, of course, still further inflammatory action. Matter is generally formed, which, in fortunate cases, finds its way out in the gum — called then a gum-boil; but, in others, it may force its way through the bone, and open outwardly upon the face, always producing a most unsightly scar; and leaving, in two cases which have been presented to us, — both young females, — an ugly opening, through which a probe could be readily passed to the diseased tooth. Still further, one of our most eminent dentists told us of a case where extensive disease of the bone of the roof of the mouth was, if not absolutely produced (though he thought that was the case), at least aggravated greatly, by a decayed tooth. It had been treated by several physicians ineffectually; but he, observing the continual state of irritation around the tooth, and believing that it could not but influence the other affection, drew the tooth, and the ulcer healed.

Having thus shown the value of the teeth, and the importance of preserving them in a sound and healthy condition, we

will give enough insight into their structure and arrangement to enable the reader to appreciate our directions for their care.

STRUCTURE OF THE TEETH. — Teeth are composed of two different substances. The roots and body, of a species of bone, though much harder than any other bone in the body; and the latter is covered with a still more dense substance, called the enamel — by far the hardest of all animal tissues. The object of the enamel is to present a very hard and resistant material, and one which will not soon wear out, to the various food subjected to the process of chewing. With a similar intent, it is used similarly to the steel entering into the structure of knife-blades, or hammer-faces. Were all the knife, or all the hammer, steel, the instrument would be too brittle; were it all iron, too soft. The one, therefore, has a strip of steel along the edge, — the other, a piece covering the part which receives the force of the blow. So with the teeth: were they all of enamel, they would be too brittle; of bone, too soft, and soon wear blunt and smooth. To gain, therefore, each excellence in its proper proportion, the enamel covers all the part of the tooth exposed beyond the gum. Within the tooth is a cavity filled with a nervous pulp — of course, highly sensitive, and under the influence of injury, exposure, and disease, affording one of the sources of “toothache.” The roots of the tooth are surrounded by a membrane, a similar one to which lines the socket into which they are planted. Inflammation in these membranes is another source of toothache. They become filled with blood, but cannot expand, and consequently compress the nerve with the power, almost, of a hydraulic press, causing most exquisite agony. A continuance of the inflammation, as we have above mentioned, is accompanied with formation of matter, abscess, perforation of the bone, and other troubles.

The enamel of the teeth does not grow; and the first teeth being small, to suit the wants of infancy, they must be gotten

rid of, and replaced by larger ones. It is with this view that, at a certain age, the roots of the teeth are absorbed, the teeth become loose, fall out, and are replaced by corresponding ones of a larger and stronger make, to which are still further added, as life advances, more grinders — the last of which are called the wisdom-teeth.

In this re-arrangement of the teeth, they are very apt to become crookedly set; and, if neglected, to produce a very unpleasant deformity through life, often affecting articulation considerably, causing great trouble in keeping them clean, inefficiency in chewing, and other inconveniences, all more serious than at first might be supposed. The importance of remedying any such deformity cannot, therefore, be too strongly impressed upon the minds of parents, many of whom neglect all attempts at relief, either from ignorance that it can be given, or that it is worth while to obtain it. We have frequently been struck with the happy results of the dentist's skill in such cases, and even when exerted as late as the eighteenth and twentieth year of age.\*

*The Gums*, which in health embrace closely the neck of the teeth, are of a firm, dense structure, and covered with a membrane, before mentioned, in our description of the skin, as the mucous membrane.

\* A few days since, we were consulted by a young lady, every feature of whose face was unexceptionable, presenting an ensemble that would give her high rank as a beauty, but for the most extraordinary irregularity of the teeth. These, in themselves, were large, firm, well made and of good color; but there seemed too many for the mouth, particularly on the lower jaw — so that, while on the left side they were crowded back against the tongue, embarrassing it much in its motion, on the right they gained room by pushing out beyond those of the upper, making a half whopper-jaw. The effect was thick utterance accompanied with a hissing, inability to cleanse the teeth effectually, an awkward movement of the jaw in talking, and a distortion of the lower half of the face when the mouth was closed — all which might have been avoided by timely care.

THE SECRETIONS OF THE MOUTH. — In various parts of the mouth, on and under the tongue, in the walls of the cheeks, etc., there are various apertures discharging fluids formed by glands situated in the neighborhood. Some of these fluids are mucus, intended chiefly for keeping the lining of the mouth and throat soft and moist, so that the food may pass down easily. Another of these fluids is the saliva, formed by two glands that open beneath the tongue, and two that open in the walls of the cheek, opposite the second molar tooth, or large grinder. These fluids contain earthy salts, which are deposited upon anything with which they may be in contact, whether it be the teeth, or metal used in the construction of any dental contrivance. This deposit is commonly called the tartar of the teeth; and permitting it to accumulate is one great and very common source of decay of the teeth, retraction of the gums, with exposure of the neck of the tooth, spongy gums, foul breath, etc.; though, in some cases, it is true, the existence of too much tartar, and the other affection, may be the joint effect of some derangement in the general system, more particularly of the stomach.\*

THE CARE OF THE TEETH. — The above is sufficient of the teeth, together with what must be already well known, to enable the reader fully to appreciate our directions for the proper care of them. In this, as in all that has gone before, cleanliness holds the first rank. Teeth in want of it suffer from two sources; one of these we have already mentioned — the accumulation of tartar. Where this has, by neglect, or

\* The extent to which persons will permit this deposit of tartar to take place is almost incredible. We presented to the cabinet of the Boston Society for Medical Improvement, some time since, a molar tooth, from an elderly female patient, on which the incrustation of tartar is of a cuboid form, measuring one inch in one direction, three-fourths of an inch in another, and the same in a third, — a good-sized body for one to carry in the mouth so long.



unavoidably, in sickness, already collected, no time should be lost in having it removed by a dentist, who is provided with instruments by which it can be done very thoroughly, and, if with proper skill, without injuring the enamel. The gums will then generally return of themselves to the neck of the tooth from which they have been separated; but, if not disposed to do so, may be stimulated by an astringent wash. The other source of detriment to the teeth, resulting from uncleanness, is decay, the most common and serious affection to which they are subject. Decay invariably commences at those points where foreign bodies, whether the secretions of the mouth or food, are apt to accumulate; namely, between the teeth, or in the deep depressions in the grinding surface of the molars, which are prone to become impacted with food, and very difficult to free from it. The process seems to be that the food, or other foreign matter deposited, undergoes a fermentation, and softens the enamel. The softened portion is soon removed, and another surface undergoes a like change, until the substance of the tooth is laid bare, when the process becomes more rapid, both from the material being more readily acted upon, and a larger quantity of the agent being at work. Another obvious effect of want of cleanliness of the teeth is the foulness of breath caused by the putridity of morsels of food collecting between them; enough of itself, surely, to induce care on this point; but should it not be, possibly we may enforce it by stating the fact that, if we do not clean our teeth ourselves, scavengers are provided to remedy as far as possible the evil effects of our carelessness. These are animalcules which Dr. H. I. Bowditch has shown to exist in great number, about the roots of the teeth, the number being in direct ratio with the untidiness of the person's mouth. Neither tobacco nor brandy seems to affect them, and the only way to get rid of them is to persevere in the habits of careful attention to the cleanliness of the teeth. Dr. B.'s theory as to their use seems a plausible one

that they act, as we have just said, as scavengers, converting the putrid matter, to some extent, at least, into what may be less hurtful.

The instrument necessary for cleansing the teeth is too familiar to the reader, we trust, to require a particular description; but a little advice may be desirable as to the kind of tooth-brush which is most likely to be efficacious. The size should be proportioned to that of the mouth in which it is to be used; not so great but that it may be passed with perfect facility between the cheek and the teeth; and not too broad, for then it will act too much upon the gums. The bristles should be so cut that the face of the brush presents a surface somewhat rounded from side to side. This enables the rubbing ends to be brought in closer contact with the teeth, particularly at the sides of the jaw, and in cleansing their inner surface, which has to be done, of course, with the end of the brush. They ought to be of a medium stiffness, hard enough to do their work, but not enough so to unpleasantly scratch the gums.\* In using the brush, the teeth should not only be rubbed crosswise, but also up and down, so that the bristles may penetrate the interstices, and cleanse them out. For a fluid to use with a brush, in ordinary cases, water with a little soap — passing the face of the brush once or twice over a cake of good old Windsor — is all that is sufficient. If this, used freely, twice a day, does not keep the mouth in good condition, it must be on account of some peculiar state of the secretions, or of the stomach itself; sometimes these are acid, in which case a little super-carbonate of soda may be added to the water. It does happen, occasionally, that the deposits from the secretions are very profuse, and adhere too readily to the teeth to be removed by the bristles simply; in such cases tooth-powder is necessary. For this, dozens of prescriptions

\* An unpleasantly hard brush may be considerably softened by soaking it two or three times in boiling water.

are given, and, indeed, almost every one has notions as to the peculiar efficacy of some particular article — chalk, charcoal, powdered Peruvian bark, gum myrrh, etc. To the last article there can be no objection, unless the one made to us by a homœopathic gentleman, who complained that they entirely nullified his medicines; but their tonic and astringent virtues are much more readily elicited when used in the form of a tincture — rinsing the mouth with it more or less diluted with water, immediately after cleansing the teeth. Chalk is apt to have gritty impurities mixed with it — liable to scratch the teeth. They may be removed by grinding it with water in a mortar, permitting the heavier parts to fall to the bottom, and drawing off the turbid water, and using what settles from it. This is the *prepared chalk* of the apothecary shops. It constitutes the basis of most of the tooth-powder sold; coloring matter, generally pink, and some perfume, being added to make it more acceptable, but, of course, not increasing its excellence as a tooth-cleanser. Against charcoal the objection has been urged that it insinuates itself between the gum and tooth, and affects the latter. When very finely powdered, it is a good polisher, and cannot injuriously scratch the teeth; while, from its known antiseptic properties, — correcting putrefaction, and purifying tainted substances, — it would, but for the above objection, which is too well supported by authority not to be entitled to respect, be admirably suited for a tooth-powder.

This completes our list of all those ingredients that a knowledge of the requisites of the case tells us can be of any service. We are fully aware that fancy, to say nothing else, has recommended dozens of others; but we cannot see that they have one claim beyond those we have mentioned, while many are decidedly objectionable. The demands are simple enough; some hard substance which will grind away impurities without injuring the enamel — such is chalk; something to correct the acidity of the secretions — such is soap, or carbonate of soda.

The tooth-pick is an instrument scarcely, if any, less important than the tooth-brush ; for it is very desirable that, after each meal, the pieces of food which remain between the teeth should be removed. It should be of such material and so used as not to scratch the teeth, or injure the gums. Quill, wood, ivory, and horn, are all good to make them of. If the teeth are very close together, wood of a thickness to be efficient in its work cannot be inserted, and, in such cases, the other substances will suit better ; but for this, wood has more of the desirable qualities than the others. Metal should never be used. As early an opportunity as practicable should be sought, after each meal, for picking the teeth. In doing it take care not to irritate the gums ; and, having done it, rinse the mouth thoroughly with cold water.

When a soft and spongy condition of the gums demands something to render them harder and firmer, a tonic and astringent wash may be used. Equal parts of the tincture of Peruvian bark and of the tincture of myrrh is a very excellent mixture for this purpose, diluting it with water no more than is necessary to prevent its smarting the mouth too much. It should be used immediately after cleansing the teeth. A decoction of white or of red oak bark serves very well for the same purpose, using an ounce of the bark to a pint of boiling water ; straining when it is cold, and adding enough brandy to prevent its fermenting. The most elegant as well as efficient preparation, however, which we know of, as a wash, is the "Oak Tooth-wash," made by Mr. Joseph Burnett, Tremont Row, Boston. We take pleasure in mentioning it thus plainly, and without qualification, as no pretension is made to anything secret about it ; it is simply a sort of tincture of tannin, but prepared with care and nicety. It can generally be used undiluted ; and, besides strengthening the gums, affords one of the best tonics for the relaxed state of the blood-vessels of the back part of the mouth and palate, common after sore throat.

DECAY OF THE TEETH. — When decay is discovered in a tooth, immediate steps should be taken to have it remedied. The remedy consists in removing all the affected part carefully and thoroughly; and next protecting the interior of the tooth thus exposed from further collection of offensive matter. If the decay is superficial, it may be filed away; if too deep for this, it must be gouged or drilled out, and, to prevent food from collecting in the cavity, this must be filled up with some substance that will not corrode. These two sentences comprise all the necessities of the case, but they are suggestive of much more that is very important.

We have said, “when decay is discovered.” We do not mean by this that the individual is to wait until he discovers it; by that time it will generally be too late to use any means to stay the disease, and loss of the tooth is the only resource from the pain and annoyance it may cause. Indeed, except near the front of the mouth, it is impossible for a person to inspect many places where decay is very apt to commence. It is, then, absolutely necessary for the proper preservation of the teeth, that a dentist should be consulted, not only when necessity for his services is made apparent by suffering and inconvenience, but periodically, at intervals not greater than four months; and with those having soft teeth, or teeth liable to speedy decay, at even much shorter intervals.

This advice, we know, will be objected to by some. We are fully aware of the prejudice prevailing against dentists, — even among the intelligent. We have often heard the complaint, from some, that they never had much trouble with their teeth until they went to a dentist, and that since then they have had to be almost constantly in his hands; from others, the determination expressed that they would not go to one until they could endure pain no longer. The first might with equal justice charge the first carpenters who repair their house with all the future and possibly frequent repairs upon

it; and the second, with equal wisdom, should decline the services of these useful artisans until their windows had fallen out, or their roof admits sunshine. And yet we do not deny, by any means, that there is some reason for the feeling above exhibited; but it must be looked for in the tendencies of the day, and not visited upon a class embracing in its ranks many zealously devoted to a highly important calling, for which faithful study, careful judgment, and great manual dexterity, admirably fit them — and, in doing so, claim for them, as a right, a position equivalent to that which any sister profession grants its followers.

The fault is here : — this is a day of, so called, *cheap* things. We demand cheap clothing, cheap furniture, cheap houses, cheap apothecaries, cheap physicians, cheap dentists. Leaving domestic economists to say whether the things they get under the first three heads are really *cheap*, we call attention to the manner in which the three last are *manufactured*, and ask whether it is at all to be wondered at, that, occasionally, a person is poisoned by a mistake of the first, killed by the ignorance of the second, or has a tooth or two unnecessarily wrenched out by the want of skill of the third. The laws give us the largest liberty — they would not be tolerated if they did not. He that sells dry goods or groceries, this week, thinking it would be more profitable to do so, is found, the next, compounding and selling the deadliest drugs, of the very names of which he had never heard in his former calling. The artisan, tired of his lapstone or plane, because, possibly, clumsy at it, leaves his honorable calling, and becomes, at a much shorter apprenticeship than was required for shoemaking or carpenter's work, a "doctor." If botanically or mesmerically inclined, a week will suffice to produce the change; if homœopathically, he must have time to let his hair grow long. If these do not suit, a *cheap* college in a few months will supply him with a *cheap* diploma (that is, one bought at

little cost of time, energy, or money), and he becomes a "Regular." The dental art has no privileges of exclusion, and any who pleases may call himself a dentist. This, it is evident, is not as it should be, on more accounts than we could enumerate here; but as it is so, we have to act accordingly, and, not trusting to names and titles, exercise our judgment in selecting such sources of professional advice as are proved, upon sound evidence, to be intrinsically good and trustworthy. A course like this will save, to some extent, each profession and occupation from the unmerited blame thrown upon it by the deficiencies of particular individuals who may choose to rank themselves amongst its followers. Pursuing it, out of the numbers styling themselves dentists, there can be no difficulty in finding those in every way accomplished in their art.

The periodical services of such we deem indispensable to the proper care and the preservation of the teeth; and the patient, giving up prejudices, founded, most probably, in ignorance or misconception, should rely implicitly upon the advice given.

To assist persons to do this, we will try to dispossess them of one or two such prejudices.

We have mentioned filing the teeth. This is commonly supposed to be very hurtful, and to hasten their decay. It is, of course, a thing not to be done without good reason for it. Nature having covered our teeth with a hard enamel, it should not be removed, unless for a cause; but such cause may exist, as we have above mentioned, and we want to assure our readers that, when it does, the filing itself is not to be so much dreaded. We have seen the negroes of Abyssinia with their front teeth filed like a saw — each to a sharp angular point; and yet, though it had been done quite early in life, not the slightest decay was visible upon them. We have also closely examined the Malays on the coast of Sumatra, where the fashion is to file a depression in the front of each cutting tooth; and, though



this was done, in many instances, to such an extent as to make the tooth break off, we never saw any decay among them. It cannot be, then, that filing hastens decay, if done in such a place that the food will not remain in contact with the exposed bone, so as, when decomposing, to act upon it; it is, in fact, to prevent such an effect that it is generally resorted to.

A similar prejudice exists, though not to the same extent, against having teeth filled, or, as it is termed in the Southern States, "plugged." Nothing could be more unfounded; and yet we have known many even intelligent persons permit their teeth to decay, without resorting to this only and invaluable means of staying the evil. We cannot imagine any hurt to proceed from the operation, further than what may show itself at the time—tenderness of the tooth, and possibly a dull aching in it for a few days after. This is generally caused by the operation having been delayed until but little of the dental substance remains between the plug and nervous pulp of the tooth, though with some of great nervous sensibility, it attends the filling of any tooth, no matter how slight the decay may be. The efficacy of the process is attested, beyond doubt, by the length of time for which a tooth even greatly decayed may be preserved by it. We know a lady, one of whose most serviceable teeth was filled by Hudson, of Philadelphia, a distinguished dentist of his day, more than thirty years ago, and is now as sound as the day it was filled.

A word about the material used in this operation. Gold is the substance generally resorted to, except where the cavity is large, and there are evidences that the tooth cannot be preserved very long; in which case, as a matter of economy, tin foil is sometimes substituted. The expense of gold, and the necessity of using considerable force in fixing it in, have induced the exertion of much ingenuity to devise some substance, of less cost, which will answer the same purpose; and several "succedanea" have been vaunted as fully equalling, in every



particular, the more expensive material, and having an advantage over it in requiring no pressure to fix them. One of these is "fusible metal," an alloy which melts at so low a temperature that it can be at once "run" into the cavity; — others consist of cements, which, made into a paste with water, are put, in that condition, into the cavity, and there speedily "set," and become as hard as the tooth itself. Some of these fulfil many of the conditions required; but they all have some defect, not at once apparent, which makes us advise that they should never be relied upon. They may do as second best, when there is an unnatural sensibility of the teeth; but, in all other cases, gold should be used. In saying this, we believe we express the opinion of the best dentists, confirmed by the personal experience of many of our acquaintances.

We have already incidentally mentioned the effect of tartar, in separating the gums from the teeth, leaving the bony substance of the latter exposed; and also the remedy for this — having the offending deposit removed, and using an astringent tincture to strengthen the gums. There is another affection resembling this, except that the teeth are not at fault, but the gums, solely; and these not primarily, but in consequence of habitual derangement of the stomach. For it, we need scarcely say, the remedy must do something more than restore tone to the gums, — which, is, indeed, necessary, too, — but the stomach must be corrected; and, indeed, the system generally will, in most instances, require some tonic influence. Another affection, which will require like constitutional measures, is the absorption of the roots of the teeth, causing the latter to drop out without decay or pain. The treatment for these, of course, could only be properly laid down by a physician, or by a dentist who has prepared himself as such.

ARTIFICIAL TEETH. — When teeth have been lost, it is often very desirable to replace them by others. If in the front of the mouth, the loss, by its unsightliness, more or less affects

the voice ; if at the side of the jaw, the expression of the countenance is much altered, and great discomfort is sometimes produced.

The teeth used to replace the natural ones are human, the teeth of some animal, generally of sheep, or artificial, made of semi-vitrified material, resembling porcelain. Those of animals are now almost, if not entirely, rejected for the purpose ; human teeth, in our fancy, ought to be ; and the skill of dentists in the manufacture of artificial ones is so great as to leave us nothing to desire. They not only imitate the texture, color, size and shape, of the real ones, but even the peculiar and indescribable individuality of the other teeth of their patient. Artificial teeth are held in the mouth in various ways. Where the tooth is a front one, and the root of the old one remains sound and firmly fixed, the new one is supplied with a pin of gold wire, which, being driven up into a hole prepared for it in the root, fixes the artificial one very perfectly ; the line where the two join being just on a level with the gum, so as to conceal it. This is a far better method than that of fastening the artificial tooth by a spring to one each side of it ; and the reason we mention it so particularly here is, to give a caution against letting the front teeth decay too far, before having them cut off, and new ones fixed — an error often committed by persons not aware of the manner in which the loss of the teeth is to be remedied.

The other method of fastening artificial teeth into their place is by a spring on each side of the tooth, as we have just mentioned, or at each end of the row, if there are several together, clasping some strong, sound tooth in the neighborhood ; or by atmospheric pressure, adapting the gold plate to which they are attached so perfectly to the surface of the gum and root of the mouth, that it is there held by the weight of the atmosphere ; or by keeping the plate or plates in apposition with the gums to which they are fitted by springs bearing

from the opposite jaw. The last method is the one generally used when the whole set, both above and below, is artificial. The selection of a proper one of these several methods is left, of course, entirely to the dentist ; but we have advice to give upon two points connected with using artificial teeth. The first is not to be too hasty, after the extraction of teeth, in getting artificial ones inserted. When a tooth is drawn, Nature commences filling up the socket ; and while this is going on, the bone each side is absorbed to a great degree, so that the obliteration of the cavity is partly effected by filling up, and partly by a removal of the bone in which it was formed. This process requires some time for its completion ; and if the plate to hold the artificial teeth is adapted to the gum too soon, in a short time the shape of the latter will be so altered that the former will not fit it. Where the misfit in such cases is so great as to prevent the plate being worn at all, the evil is not so great as where it is still worn, but is movable, and permits the secretions to insinuate themselves between the plate and the gum or roof of the mouth, producing more or less irritation, and great offensiveness. The time required for the completion of the alteration of the gums will vary, according to the number of teeth drawn, and the state of the general health, from six weeks to as many months, or even more ; but until the process is perfectly finished, a plate ought never to be fitted to them.

The other point upon which we think advice necessary to those who use artificial teeth is the cleanliness both of the mouth and the teeth. About that of the former, we have nothing further to say, except that the rules given above should be obeyed with three-fold strictness. About that of the latter, persons using them always receive some general directions, that they ought to be kept very clean ; and a certain routine is generally gone through with them — taking them out at night, putting them into water, wiping them off, etc. But

these are often either given so generally, or with such little emphasis, that, though nominally followed, they fall far short of inducing that care of the teeth which will insure their preservation, and prevent their becoming, in some instances, a nuisance to the wearer, and a detriment to the teeth that remain. They should be removed at night, brushed thoroughly over with soap and water, and dried carefully with a soft linen rag. The next morning, before replacing them, they should be rigidly inspected, to ascertain if any tartar, or other deposit, remains upon them. If there is, it must, of course, be removed; and, for this purpose, if the brush and rag do not suffice, a piece of soft pine stick may be used. It is only by pursuing this course daily and thoroughly that artificial teeth can be worn, without, sooner or later, producing discomfort, and even, in some cases, obstinate disease of the parts in contact with them.

Had we any hopes it would at all avail, we would conclude this chapter by a homily expatiating still further on the value of good teeth, and the importance of an early and unremitting care of them; this, however, is one of the many points on which youth never learns from others, but must exercise its own judgment, and reap the fruits of its own experience.

## THE EYES.

THE mechanical construction of the eye, as an optical instrument, is, in these days of "science made easy," too frequently set forth in school-books, to require a description of it here. It may, however, be advantageous, for the better appreciation of our directions for the care of the organ, both in health and in disease, to impress the reader with some of the peculiarities of its anatomical structure. As small a part

as it is of the whole system, the apparatus of the eye has entering into its mechanism a representative of almost every tissue or material of the rest of the body. Enelosed in a cavity of bone, the globe is softly cushioned in fat, in which it is freely moved by an appropriate set of muscles, attached to it by tendons, and richly supplied with nerves and blood-vessels. A gland — the lachrymal — is fitly placed to keep its outer surface moist and free from impurities, by bedewing it with tears. This surface is covered with a soft membrane, — previously mentioned as the mucous, — which supplies its own peculiar fluid, lubricating it, and facilitating the motions of the eyelids upon the globe. The globe itself is outwardly formed of the toughest and most resistant of all the pliant tissues, immediately within which is a wonderful lining of blood-vessels, and spread over one half of this, an expansion of nerve so delicate that the gentlest ray of light that falls upon it is noted and transmitted to the brain. The serous membrane, which is elsewhere used to hold the intestines in their place, to wrap the lungs, to enelose the heart, to furnish the brain with a covering, and the joints with a lining, is here also found supplying a lining to the cornea, and to the chamber of which it forms a wall, through which the light passes in, whilst other portions of the optic apparatus peculiar in the use exhibit a structure as peculiar, suited to that use. Strangely complex, yet wonderfully adapted in the fitness of all its parts, — yielding us enjoyment not only beyond expression, but even in its entire richness and fulness beyond apprehension, — there is scarce an organ we possess, so habitually hardly dealt with, so ungenerously used in health, and so niggardly cared for in disease, as the eye. We daily see the grossest disregard of those laws of hygiene which should direct us how to preserve its excellence unimpaired through the period during which we might expect to require its services; and when diseased, — delicate as our momentary sensations tell us the organ is, — none is more

liable than it to be committed to the pretensions of a quack, to the virtues of a nostrum, or the chance advice of a friend.

It may already be apprehended, after the sketch just given of the manifold structure of the eye, that we have no intention of attempting to instruct the reader in its medication when diseased. We could sooner teach him to free the delicate levers, springs and wheels, of his watch, from the dust that might embarrass its movement, or to remedy the effects of time upon its mechanism, than to judge which of the various tissues or parts of the eye are disordered, in any particular affection, or to correctly apply a remedy to such affection.

We wish, however, to set forth as clearly as possible the rules which should habitually govern us in the care of our eyes, and the abuses to which we are most prone to subject them. As a general principle, — in common with all other organs, — the eye is more or less affected by the health of the system at large. It more immediately, however, and greatly participates in any affection of the brain, or any undue determination of blood to the head. Such affections, if violent, of course, at once come under the care of a physician; if gradual in their invasion, they are not likely to be detected by the sufferer himself until they have done the mischief, nor generally even then. We, therefore, mention this here, not so much in hopes of enabling the patient to discriminate the cause and remedy the difficulty himself, as to caution him, in any impairment of sight not accounted for by age, or by any evident affection of the eye, to be careful to put the physician consulted into possession of all such information concerning his habits and pursuits as might point out, if such exist, the influence of the state of the brain upon the disease. The necessity for this suggestion seems more urgent from the fact of the great prevalence amongst us, for some few years past, of a disposition to great sensibility of the eyes — to such a degree, in many instances, as to entirely preclude their exercise in read-

ing, writing, sewing, or any employment requiring a similar exertion of them. We have often heard a wonder expressed as to the cause of this frequency; but we think it fully explained by our habitual errors in living, the high temperature of our houses, sitting before the intense glow of anthracite fires, want of out-door exercise, wearing thin shoes, reading badly-printed books, particularly German, too great application to study, constant nervous excitation, and, in short, by a general over-stimulation of mind and body, without any hygienic correctives.

The most common source of impairment to the eyes is in habitual, almost hourly, abuse of them. The method of this varies with each according to his individual ways and occupation; we can, therefore, only specify and advise against some of them; but these may illustrate others.

THE DEGREE OF ILLUMINATION.—It is a very common fault not to have the object sufficiently illuminated. We do not apply this remark to the instances, frequently seen, of persons attempting to read, or to finish off the last stitches of their work, by twilight. Common sense should tell them, before we do, that such efforts cannot be made without detriment to the eyes, severe in proportion to the amount of such abuse, any more than the voice can be strained to its utmost without impairing its strength and the fineness of tone; or, indeed, than any organ can be taxed to its extreme capability, without, for a time at least, lessening the fulness of its perfection. What we mean is, that persons are frequently content with an amount of illumination which seems sufficient to them, but which may, without their feeling it at the time, cause a continual strain upon the eyes, that must, after a while, injure them. This is a fault very frequently seen in counting-rooms, which are often placed far back in stores, the windows of which are filled up and darkened by a display of goods. Parlors darkened by curtains to what is considered by ladies as “a be-



coming light,"—in reality an unpleasant gloom to those unpractised to it,—present another example. As might be expected, the evils of deficient illumination are most frequent when we have to resort to artificial sources of light. Even with the astral lamp, which was a great improvement upon anything previously used, they were very great, and the comparative expensiveness of that lamp considerably limited its use. The solar lamp, and the more extensive introduction of gas to our stores and houses, offer means of remedying the difficulty before existing, of procuring artificial light in sufficient amount. The former we look upon as a great blessing; the lowness of its cost, as well as of that of the fluid burned in it, putting it within the means of thousands, who, before its invention, suffered greatly at their necessary night-work. It is liable to be used so as to cause injury to the eyes, it is true; this, however, is not a defect in it, but ignorance in those using it of certain principles which we go on presently to state.

THE DIRECTION FROM WHICH THE LIGHT COMES.—In the common occupations of reading and writing, much may be done to lessen the tax upon the eyes by a proper arrangement of the light. What tries them most in these is the glare from the page. To lessen this, the Germans print many of their books upon bluish paper, which undoubtedly would have an excellent effect, if the hue were uniform, and if it were not nullified by bad typography, and by the peculiarities of the character, presenting a great uniformity of perpendicular parallel lines.\* We can diminish it at all times, however, to a

\* We do not know whether the force of this remark will at once be appreciated, yet we are strongly impressed with the justness of the objection to the old German type. Some of the Oriental alphabets exhibit the peculiarity in a still more marked degree, the page presenting a dazzling array of uniform perpendicular heavy lines, only relieved by light strokes equally uniform and monotonous. The effect alluded to is still more strongly felt from the same cause,—a too great uniformity



certain extent, by so placing the book or paper that it may not reflect the light received by it directly into the eyes.

Most generally, when it is practicable, writing-desks are placed between the writer and the window. The light consequently strikes down upon the paper, and, reflected up at the same angle, enters in full flood upon the eyes of the individual. Now, were they placed with the window at the side (the left is the best, as in writing the face is turned *from* that side), the light would strike down from that side, and be thrown off on the other, illuminating the page sufficiently, whilst the writer's eyes, being between the two rays, would escape the violence of each. In reading, too, most persons put themselves with the back directly to the light, with the same effect; but let any one try the experiment of first turning upon himself the full glare of the page, and then canting the book a little. He will find that while he still has the type sufficiently distinct, the tax of the eyes will be immeasurably less in the second instance than in the first. The same remarks will apply to the position of work-benches in many occupations requiring the exertion of the eyes upon very small objects. It is true that, with some, such as watchmakers, jewellers and engravers, it is absolutely necessary to have the direct reflection of light; but the first two, at least, might save much of their eyesight by covering the work-table with paper slightly tinted green, instead of using pure white, as they generally do.

Another very common instance of the bad position of light, from which we have seen a great deal of trouble, is that of a lamp at night, and chiefly as used in sewing. In order to sufficiently illuminate the work, a low lamp is used, so as to get the light as near as possible. The consequence is, that though the required amount descends upon the work, a much

of parallel lines, contrasting strongly in color with the ground on which they are drawn, — in copying music, a very trying exercise to the eyes.

larger portion *ascends* into the eye. Were it intended that light should come from such a direction, the position of the eyelids and eyebrows would have been reversed, and the larger guards and shades have been put below. Considering the arrangement of these appendages, however, it is evident that light should always, if possible, come from above; then, as we look down upon a book or work, we have the eye protected from all rays proceeding directly from the source of illumination. We strongly urge a consideration of these views upon all who have occasion to employ their eyes at night upon small objects. Our experience daily confirms us in our belief in the correctness of them, and that an immense deal of the bad eyesight and weariness of the eyes, so often complained of by needle-women, is caused as we have above stated.

With these views, we must condemn the prevailing fashion of solar lamps with short, stumpy shafts to support the burner. They bring the flame either on a level with the eyes or below it, in either case pouring a hurtful quantity of light directly into those organs;—and still more, for the same reasons, do we disapprove of the latest invented small hand solar lamp, which is very much used now for sewing by. This is the wrong use of this really excellent lamp, which we alluded to above. We would, of course, on the same grounds, object to any lamp, the flame of which is low; but we speak more particularly of solar lamps, because they are most generally used, and because their flame is peculiarly brilliant and proportionably hurtful when so used.

If it is necessary to have the object brightly illuminated, and a tall lamp is insufficient for the purpose, use a low one, but intercept the light which would pass directly to the eyes by an opaque shade. Such a one can readily be made of common card or bonnet-board, and by means of wires, with the exercise of a little ingenuity, be fitted to any lamp. It will also give another advantage, in acting as a reflector. There

is it is true, an objection to using a light in this manner, if it is the only one in the room. It makes the object and the space immediately around it very bright, whilst the rest of the room is shrouded in darkness ; — the consequence is, that the eye is exposed to great alternations, in looking at the object and from it. All the evil from this source may be readily and perfectly remedied by having another light in the room ; and this second one need not be very brilliant, so that a small and inexpensive one will answer. We are thus precise in mentioning this evil, and the cheapness of its remedy, because it is those to whom the latter is a great object that are most obnoxious to the influences of the former.

*The kind of light* used, as may be supposed, is of great importance. Of course, daylight is the best ; but even this, under certain circumstances, requires modifying and subduing. In all cases, but particularly in rooms used habitually for several hours through the day, too great glare should be avoided. Curtains are the most common and obvious means of attaining this end. Opaque ones, however well they may serve to enrich and beautify a room, are not available as modifiers of lights for practical working purposes. They lessen the space which admits the light, but they leave as much of it as does enter undiminished in intensity. We should, therefore, use some transparent material, which will intercept, as it were, some portion of every ray of light admitted, so that a general but mild illumination is diffused through the room ; and that one part of it, as is likely to be the case in the former instance, might not be lighted very brightly, and the others as dimly. We need scarcely add, that transparent curtains may be used as means of tinting the light admitted, and thus serve another highly important end ; for the eyes are frequently much more tolerant of light of one tint than they are of that of another, even when of the same intensity. The gratefulness of green is an instance of this, very familiar un-

doubtedly to all; and the wearying effect of reds and yellows, under certain circumstances, probably equally so.

Useful as curtains are, they do not answer the purpose entirely of themselves, and are even apt to have their good effects rendered naught, if attention be not paid to coloring the walls of the room a proper tint, and to a proper depth of hue.\* The rules for this it would be difficult to give in detail, but the general principle is in itself simple, and is founded upon the well-ascertained properties of certain colors to absorb or reflect a greater amount of light than others. If the exposure is a south one, having at all times a great command of light, the hues may be very positive — blue, green, or brown, though not reddish — and of very deep tint, absorbing a large amount of light. In Pompeii, where they could depend upon a very constant and bright sunshine, many rooms have been found, the ground color of the walls of which is of the very darkest brown, and even perfect black — relieved, of course, by figures and other ornaments, yet presenting large surfaces of these colors. If the exposure is to the east or west, and the room used through the whole twelve hours of daylight, the same hues may be selected, though not so deep — or their *grays* may be used. If the room has a west exposure, and is only used in the morning, or an east exposure, and is only used in the afternoon, warmer hues than these, containing more red, salmon color, etc., may be used, without making too

\* This is a subject which, in common with ornamental painting of interiors, has excited as yet too little attention amongst us; and we frequently see the most glaring violations of all propriety in choosing the colors of wall-paper, furniture and carpets. In Pompeii they understood such things much better than we do, amongst whom is not unfrequently seen a north room clothed in gray, so cold as almost of itself to freeze you, whilst a south room, in the same house, filled with bright sunshine through the greater part of the day, may be resplendent in scarlet, orange or salmon color.

much glare ; while, in reversing the time for using the same rooms, an opposite selection should be made — cool colors, as in the first instance given of a south room. A north room, on the same principles, we need scarce say, could have high coloring, with warm reds, reddish-brown, salmon color, etc. These rules, broadly stated, may, at first, appear fanciful, and in our city houses, where the space is very limited, and one apartment has often double duty to do, it may be difficult to fully carry them into use ; they may, however, serve as a guide to the attainment of effects not less beneficial to eyes physically than grateful to that correct taste which is ever pleased by harmony and propriety.

The effect of untempered daylight upon eyes feeble or unaccustomed to it is well shown in a case related by one of the most distinguished authorities in ophthalmic medicine. A lady removed to the city, having spent the previous portion of her life in the country. She was soon attacked, without apparent cause, by an unnaturally exaggerated sensibility of the eyes, which for some time baffled treatment. It occurred to her medical advisers that the room which she habitually occupied, having a south exposure, and being illuminated still further by the glare of a white wall opposite the window, might be concerned as a cause of the trouble. She exchanged it for another in the same house, overlooking a grass-plot, and shadowed by a tree ; after which, the disease, with very little treatment, disappeared, not to return. Another case is related, by the same author, of a young man, in whom symptoms of serious optic disease were traced to his bed-room, having an exposure to the east, through which the sun poured in untempered, subjecting his eyes, at first awakening, to its full glare. We all know, from daily experience, how painful a sudden blaze of light is to the eye previously shaded in darkness. In the case just related, the suddenness of the change was too great for the nervous sensibility, and bid fair to exhaust it,

— nearly producing that disease known as *gutta serena*, a paralysis of the optic nerve, attended, of course, by blindness. A medical friend, of great experience in diseases of the eye, tells us that to the same cause — exposure of the eye, at awaking, to the glare of the sun — he has traced many cases of morbid sensibility of the eye, some of which were relieved by scarce doing more than removing the offence.

Our instincts, however, in most instances, teach us to effect, more or less perfectly, the requisite modification of daylight. It is night that tries our eyes to an immeasurably greater degree.

ARTIFICIAL LIGHT. — Upon the production of artificial light, an amount of ingenuity has been expended second only to that exerted upon contrivances for the production of heat. Of course, in the contrivances thus elicited, economy and convenience have been qualities greatly in view. With these, however, we have no immediate concern. For our purpose — that of the health of the eye — it is only necessary that the light should be uniform and sufficient. A lamp unprotected by a shade is apt to flare from currents of air in the room; a candle has the same objection, besides which, it often flickers. Their illuminating power, too, unless several be used, is feeble. To produce steadiness of light, the flame should be protected by a shade, and to temper the effect of a vivid point of light, the shade should be of ground glass. These are the essentials, whether the illumination be from tallow, wax, oil or gas.

LAMPS. — Though, as we have just said, we have no immediate concern in lamps, in an economic point of view it may serve a useful end in enabling the reader to appreciate the excellencies and demerits of any particular lamp, were we to explain the principles upon which these utensils are constructed. The requisites for a good and economical lamp are that the desired amount of illumination should be obtained, without too great cost for the lamp itself or material burned. To

these may be added, as equally important, that the former should be simple in its construction, and readily kept in order, and that the latter should be consumed without waste in the form of smoke. To attain the last condition, it is necessary that every portion of the combustible matter be freely supplied with air. When a wick of common wick-yarn is used, if it is beyond a certain diameter, the particles of burning oil in the middle of the wick are imperfectly supplied with air, and consequently smoke is produced. The only way of increasing the effectiveness of such lamps, therefore, is, not to increase the size of the wicks, but the number of them. The first improvement in this was the adoption of a thin, flat wick, which should present a long burning edge, the air having free access to each side. The next was to change this straight edge into a circular one; in other words, to use a cylindrical wick, through the middle of which, as well as on the outside, a draught is created by a glass chimney. This is what is called the Argand burner; and there has been no improvement in the principle upon which it is constructed, though the particular application of it has undergone many modifications. The peculiarity of the solar lamp is in increasing the draught by a taller chimney, and by a narrow aperture just above the wick, so as to bring a large amount of air in contact with the burning matter;—in other words, creating a sort of blast furnace, that will consume almost any inflammable greasy fluid, in spite even of an admixture of impurities. The Carcel and Oleostatic lamps, so far as the management of the burner is concerned, are but modifications of the Argand lamp, with a view of increasing the draught, and of so adjusting it as to consume a large quantity of oil, with which the wick is kept deluged; in the former, by means of little pumps, kept in motion by clock-work; and in the other, by means of the contrivance known in hydrostatics as Hiero's fountain, in which the weight of one body of fluid descending is made to raise


another body to a greater height than the former. The object of this arrangement is to so elevate the flame that the body of the lamp will cast as little shadow as possible; besides which, from the large quantity of oil consumed, the light is very brilliant. On the whole, if perfection of illumination is considered without regard to cost, these lamps are the best now in use; and, of the two, the oleostatic is preferable, as it is not so liable to get out of order as the other. Next to these, the solar lamp answers the most ends, and is by far less costly, both as regards the price of the lamp, and of the material used, which may be low-priced oil, or lard.

Gas, as regards convenience, and brilliancy of illumination, is preferable to any lamp; nor do we find, in reality, any grounds for the objection made to it by some, that the light is particularly hurtful to the eyes. It is brighter, and, of course, may do more damage to them, when improperly used, than a milder one would; but this is not a necessary accompaniment to its use, while it has a positive advantage in being readily put where lamps could not be, thus enabling us to obtain light from a direction more favorable to the eyes than if it came from a point differently situated. With what we have already said, our reasons may be appreciated when we assert that a room is as perfectly lighted by a gas chandelier, at the height of about ten feet or more, as our present means of illumination will permit. The light is sufficient, and it comes from above.\*

\* We consider the method of lighting it to be one of the most admirable features in the new Music Hall in Boston — above even its architectural excellence, as great as that is. The lights are arranged along a cornice, thirty feet above those in the highest balcony, and some fifty feet above the mass of the audience. Below this there are none. Those who have had to look at a lecturer, or a musical performer, a whole evening, *through* a chandelier of gas-lights, and have tested the Music Hall, will not think we commend this too highly, and must feel grateful to Mr. Snell, the architect, for the consideration he has given this part of the design.



What we have said above must be recollected ; in all lamps, the brightness of the flame must be tempered by a shade of ground glass, and this should be plain — uncut. When the ground surface is removed by cutting, the light comes through with its full strength, and this is often increased by the cut spot acting as a lens, and concentrating it. Thus a great inconvenience is suffered, and no advantage gained ; for the patterns used in this attempt at ornamentation are generally anything but graceful.

When rooms are lit by lofty chandeliers, the best shape for a shade is a cone, with the apex downwards :  With this, the light that comes immediately down is tempered by its passage through the ground glass ; that which ascends to the ceiling is unimpeded, and much of it is reflected downwards ; thus, on the whole, much less being lost than when a globular shade is used.

SPECTACLES, though intended to benefit them, are a fruitful source of harm to the eyes, whether used of tinted glass for the protection of too sensitive ones, or with lenses for the bettering of near or far sightedness.

In weak eyes, as they are commonly called, tinted glasses may sometimes be necessary ; but the opinion of an oculist should determine when such a condition exists, and not the mere sense of comfort derived from them by the invalid. Trusting to the latter indication, they are often adopted, and, relief from suffering for the time being attained, all curative means are neglected, so that the disease producing the over-sensitiveness still unobtrusively goes on, until, possibly, it gets beyond the reach of any art. Even where the affection is purely a nervous one, — simply an intolerance of light, unattended by any appreciable *organic* change, — this objection to them has as full force, and for the same reason, namely, that the comfort given by them induces a continuance of the same abuses of the eyes, — generally over-straining, — which caused the

trouble, and a neglect of the exercise, care in diet, etc., which is necessary to remedy the disease.

When tinted glasses are used, hitherto green and blue have been the tints most commonly selected, besides violet, yellowish-green, and sundry other equally objectionable colors; each clothing the objects seen through them in one uniform hue — their own. A great improvement in this has been devised among the French, by using glasses of a neutral tint, gray, or smoke color. None of these gives a positive color to the objects viewed, but only *tones* them down in a degree proportioned to the depth of the tint of the glass.

In some instances, instead of glass, very fine wire-gauze has been used for weak eyes. Oculists have pronounced very strongly against them, as having a bad effect upon the retina.

In near-sightedness, — myopy, — the rays entering the eye are converged too abruptly, so that the image of the object viewed, instead of falling upon the retina, falls in front of it. Concave glasses are, therefore, required to disperse the rays to just such a degree as will precisely balance this too sudden convergence. In far-sightedness, — presbyopy, — the reverse is the case; the rays are not brought to a focus abruptly enough, — the image falls behind the retina, and therefore convex glasses are required, which will approximate the rays more abruptly — just enough so to counteract the defect.

In fitting glasses to the eye, it is evident that some knowledge and judgment is necessary, that the point be precisely attained — that the end is not overshot; for if, in the one case, glasses too concave, or, in the other, glasses too convex, are adopted, harm is inevitably done. It is much to be regretted, therefore, that this fitting defective eyes with glasses is left so much to simple opticians, possessing, possibly, great skill in the mechanical details of their art, and even, in some instances, a great knowledge of optics as a science, but not adding to these an acquaintance, to some extent at least,

with the proper art of an oculist. Though, of course, we cannot supply this desideratum to the reader, we trust we may be able, in what we have already said and in what follows, to assist the judgment, in saving the eyes from harm.

The lenses used, we have mentioned, are concave or convex. There have been some modifications of these forms, which, at various times, have been greatly extolled; none, possibly, more so than those invented by the celebrated Wollaston, called periscopic, from their affording a larger field of vision. They may yield some little gain in this, but it is fully overbalanced by loss of power and by clumsiness. The kind, therefore, that are now, almost without exception, used are the double concave, and double convex; that is, those having both surfaces equally concave, or convex, as the case may be.

The materials used for lenses are glass, Scotch pebble, and rock crystal. A writer, who seems to have gone very thoroughly into the subject,\* rejects rock crystal, entirely, as decomposing the light very much, and having a surface easily injured. To the Scotch pebble we have never heard objection, except their high cost without commensurate advantage. They do not become scratched, it is true; but neither does good glass, when taken care of, until after long use. To crown glass he gives the preference over flint, for its superior hardness, its entire want of color, and its not decomposing the light — qualities in which, he says, the other greatly fails.

The shape and size of the glass is the next consideration. The first is not of much importance, if the last is ample. An absurd fashion, and a desire to make spectacles as little obtrusive and as ornamental as possible, have reduced the size of the glasses too much, not only inconveniently lessening the field of vision, but subjecting the eyes to a painful and hurtful tension in their involuntary efforts to accommodate themselves

\* Magne, — “Des lunettes, conserves, lorgnons, etc., conseils aux personnes qui ont recours à l’art de l’opticien.” — Paris, 1851.

to the limited space before them. The rule should be, to have the glass as large as possible without clumsiness.

Another particular, to which more attention should be paid, is that the glasses be in proper relation to the eyes. Sometimes they are too far apart, — oftener, too near, — and still oftener, set too low. The centre of the glass should correspond precisely to the pupil of the eye. If it does not, either the eyes are strained in involuntary and unconscious efforts to produce such accommodation, or we lose a portion of the benefit of the lens.

The distance of the glass from the eye should be just sufficient to prevent the eyelashes from touching it. Too far off, the field of vision is lessened; too near, an irritation of the eyelids may be set up.

These two ends are attained by modification of the cross-bar connecting the glasses. Its length, of course, regulates the distance between their centres; its shape, the other particulars. When the part of the nose upon which the spectacles rest is high, the bar must be arched, in order that the glasses may drop low enough; when low, the curvature of the arch, of course, may be lessened.

When the bridge of the nose is prominent, besides the necessary amount of the curvature just mentioned, there should also be a little horizontally forward, so that the glass may be sufficiently approximated to the eye.

The fashion of the *temples* of the spectacles may depend entirely on convenience. For women, when made of two pieces, the rivet is apt to catch in the hair, in putting them off and on; but for this, the jointed temples are more convenient, and adapt themselves better to the head. To favor the adaptation, also, they should have a loop at the end, not simply a flattened termination.

As to the material used for mounting glasses, we must first consider the qualities desired — strength, stiffness, as little

weight as possible, and freedom from corrosion. Gold, properly hammered, possesses all these ; silver is a little deficient in the last — at least, it tarnishes ; steel does this still more readily, but is perfect in all the rest ; besides which it is low-priced — a great desideratum, for the poor as well as rich want spectacles. Tortoise-shell is light, but brittle, too flexible, and apt to warp, deranging the focus of the glasses.

There have been some modifications of the ordinary spectacles, which we may notice.

Persons past middle life frequently require concave glasses for looking at a distance, but convex ones to read with. Franklin suggested that, instead of having two pair of spectacles, and the trouble of replacing one with the other, the same pair should be made to serve, by having the upper half of the spectacles filled by a portion of a concave lens, whilst the lower half was filled by a convex one ; so that, in looking down, on a book, for instance, the lower half served, but in looking abroad the upper. We have seen this contrivance used habitually by many who are pleased with it ; nevertheless, in common with all contrivances made to serve a double purpose, it serves neither so well as if it were made especially for it.

In England another modification is used, which we have never seen in this country, called barristers' glasses. They have somewhat the same purpose as the last, the lower half alone of the lenses being set in semi-circular frames, the upper edge constituting the diameter ; so that, in looking straight forward, at the court, for instance, the barrister sees over this edge ; but in looking down at his brief, he sees through the convex glass. We can conceive that these may be very useful for this purpose, and are a little surprised that they have not been introduced here.

Spectacles are sometimes made with side-glasses, of tinted glass. This is a clumsy contrivance, increasing unnecessarily

their weight. A piece of green silk, neatly adapted, would serve the purpose much better.

The eye-glass is another contrivance for assisting defective vision. Single ones, described by the writer above quoted as "a piece of round or square glass, kept in its place by a *prolonged grimace*," should never be used. They imperfectly fulfil the object, and injure the eye. The double ones are made to fold in upon each other, so as to take up no more room, when not in use, than the single one. Those mounted in steel are the cheapest, very neat and light. The pivot by which they are connected being made a little tight, they can be placed upon the nose so as to remain there very firmly. The last contrivance in this line is the neatest. The glasses are each mounted in circle of tortoise-shell, and connected by a piece of watch-spring. This, by its elasticity, keeps them steadily against the nose, and yet, when they are folded up, adds nothing to the bulk. One of these two last mentioned should always be used, instead of the single glass.

In three instances we have seen very near-sighted persons use two pair of spectacles at once. This is unscientific and clumsy in the extreme. If they are so near-sighted as to require such high powers in their glasses, the two should be properly adapted to each other, by some light contrivance, readily suggested, and not merely thrown together, with every chance of the foci not being properly adjusted. Besides the weight, inconvenience and inefficiency, there is positive harm done to the eyes.

It is a question of great importance when persons ought to begin the use of spectacles, and we daily see instances of error at each extreme, in the attempts to solve it. Some, directly they find their eyes not so good as they ought to be, resort to glasses, which have speedily to be increased in power, and the defect becomes rapidly greater. Others, on the other hand, desirous of escaping the trouble, uncomeliness, or other disad-

vantages of glasses, go<sup>\*</sup> about, serewing up their eyes, and making any degree of contortion, to obtain a little temporary improvement of their vision, or philosophically content themselves with seeing only what is within a six-foot radius, ignoring the rest of the world. Both are in fault. If the vision does well for most purposes, — either in viewing near, or in viewing distant objects, as the ease may be, — but is, occasionally, upon some particular necessity, found deficient, use for such occasions a double eye-glass. As soon, however, as these occasions cease to be exceptional, — when it is found that the eye has to be habitually strained to meet most of the demands upon it — submit at once, and adopt spectacles. They never look worse than the grimace you make in attempting to do without them, and they save the eyes from the strain which must tend to injure them.

Glasses of the feeblest powers should be commenced with, and not increased in strength more rapidly than is absolutely necessary. As a guide to the judgment in this, when concave glasses are adopted, they should not render objects more distant and smaller, but simply clearer and more distinct. So, when convex glasses are used, they should not magnify, but merely enable the person to hold his book near, and define more readily and perfectly the form of the type.\*

STIES. — The only other affections that, for reasons above given, we can offer any advice upon under this head, are two of the eyelids. One of these is that familiarly known under the name of sty. It is an inflammation of the oil-glands on the edge of the lid, and resembles much in its symptoms, as it does in the nature of the affection, the pustules of acne. A point at the root of an eyelash first becomes red and irritable; — then

\* For more extended instructions on the employment of spectacles, the reader may consult, with great advantage, Sichel on "Spectacles, their Uses and Abuses, in Long and Short Sightedness," translated by Dr. Henry W. Williams, of Boston.

a stinging pain is felt, which sometimes even is so great as to produce restlessness and other febrile symptoms. Sometimes, by pulling out the lash in the middle of the pimple, the inflammation will disappear, but this only when it is confined to the hair-bulb at the root of the lash. Matter forms slowly, but shows itself at last in a yellow spot, generally around the root of the lash. The skin in time breaks, and gives vent to the contents of the little abscess; — altogether, a painful, inconvenient and unsightly affection. When it is apparent, by the persistent pain and redness, that a sty is forming, it should be at once attacked by touching it every hour or so with a point of cloth dipped in very hot water. It is surprising to find how hot the water may be, not only without giving pain, but even conducing to comfort by lessening the pain of the inflammation.\* If the inflammation has gone beyond this stage, and matter is evidently forming, a small soft poultice of slippery-elm should be applied warm, and frequently renewed. When the matter has formed, and exhibits itself in a yellow spot, if the pain, redness and swelling, still be very great, it should be opened, and that not simply by the prick of a needle, as those things often are when dealt with by household surgery, but by the free cut of a lancet. To disperse the hard lump and redness remaining after a sty, we have found nothing better than hot water, applied in the same manner as above directed, though, of course, it need not be used so often.

Should there be a disposition to the formation of sties, much the same general course ought to be pursued as we have advised for those suffering from acne, and the system will

\* A very highly intelligent physician of Orizaba, Mexico, told us that the domestic treatment of sties there is to break open a small but intensely pungent native pepper, and rub the edge of the lid with the inside core. It evidently acts as the hot water does, by setting up a new species of inflammatory action, as it were, destroying the former one.



generally require the administration of quinine ; but, of course, this is better left to the physician.

The other affection we alluded to is a redness of the edge of the lids, caused by a species of the disease before described as eczema. When closely examined, very minute—almost microscopic—pimples, filled with a watery fluid, will be found distributed along the edge of the lid, and between the eyelashes. We have frequently combated this with perfect and speedy success, by touching the edges with hot water, as just directed, morning and night. When it resists this, the ointment of the nitrate of silver, made by rubbing up twelve grains of this article with an ounce of hogs' lard (of course, to be done by an apothecary), in most cases will serve ; but, as this is apt to blacken the lids, the treatment had probably better be commenced with a milder preparation—zinc ointment, the *unguentum zinci* of the shops.

*To get Foreign Bodies out of the Eye* is an operation requiring some tact and readiness in the use of the fingers, to say nothing of good eyesight ; for it is astonishing how almost microscopic a particle may be that causes great pain and suffering. Frequently, when the body is under the upper lid,—where, indeed, it generally is,—by taking hold of the lashes, and drawing the upper over the under one, the particle will attach itself to the lashes of the latter. When this does not succeed, a method may be used, which we learned from a stage-driver, and a most admirable one it has proved. He took a stout hair from a horse's tail, bent it double, and over the loop thus made stretched smoothly the corner of a silk handkerchief. The flat oval instrument thus made, after dipping it into water, he passed in at one corner of the eye, between the lid and the ball, and carried it gently over the latter to the other corner, where it was drawn out with the offending particle attached to it. We have used the loop-like end of the side-piece of a pair of specatales, covered in a like

manner, for the same purpose ; but the elasticity of the horse-hair adapts it better to the end. Should this not succeed, the lid must be turned wrong side out, so as to be thoroughly examined. This requires some sleight of hand, but it is generally readily acquired. With one hand hold a bodkin, or anything of that size, upon the lid, parallel with its edge, and with the other hand seize the lashes, and by them draw the lid out from the ball, and carry its edge upwards over the bodkin. This exposes the inner surface of the lid, so that it can be searched for the foreign body, which may be removed with the corner of a handkerchief, or a little rag made into a pointed form. Very often persons are under the impression that a foreign body still remains in the eye when it has actually been removed. The cause of this is that the vessels have been enlarged by the irritation set up by the body. Generally, bathing the eye in cold water will remove the cause and the sensation ; but, should it last beyond twenty-four hours, there is reason to suppose that the damage may be greater, and more decisive measures ought to be resorted to.

In any other affection of the eye, if it persists, without improvement, beyond twenty-four hours, or, if very acute, in shorter time than that, consult a physician. Do not comfort yourself with the fact that it is only a cold, or only something that has gotten into it. A cold may cause inflammation and destruction of the whole eye ; and we have seen a little cinder, or grain of dust, where the system was in a peculiar condition, set up an ulcer on the "sight" in less than a day. And, above all, do not, in such cases, use a remedy because it has cured the eye of somebody else. It may have done so, but you do not know that the eye it cured was in the same condition with your own. We lately saw a most melancholy illustration of our meaning. A pilot, while bringing a ship safely into port during a violent easterly storm, was seized with a cold, which settled in his eyes. A friend, coming in,

told him he would send him a wash which had cured his at once, when he had a cold in them. It was used, and immediately aggravated the inflammation to such an extent as to make him irremediably blind, both eyes being wholly destroyed. Undoubtedly the remedy was a good one for a certain stage of the disease; but it was used at a wrong one, and has subjected a man, still in possession of all his other faculties, and at a time when his professional attainments were most valuable, to a dreadful deprivation.

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## THE EAR.

IN the habitual care of the ear there is little to be done that will not readily suggest itself from the preceding remarks. The outer ear should be well cleansed, and the passage be wiped out every day, as far as the tip of the little finger, covered with a soft wet rag, can reach, but no further. The practice that some have of inserting still deeper the point of an ear-pick, or some other instrument, is, to say the least, perfectly unnecessary, and may cause a hurtful irritation of the deep-seated structures, if not irreparable injury to the delicate auditory apparatus. If the wax collects in it, so as to obstruct the passage, — as it sometimes is liable to do, from an increased secretion of that substance, produced by cold, — it should be removed by syringing the ear out with warm water, having, the night before, dropped two or three drops of almond or olive oil into it, to commence the softening process. The operation must be continued for some little time, as the wax has first to be considerably softened before it can be loosened and carried out by the current. The best kind of syringe for this purpose is an India-rubber ball, with a fine ivory nozzle attached to it, readily obtained at the India-rubber stores.

In cases of deafness, and particularly if sudden and unattended with an acute trouble, obstructions of this sort may be looked to as the cause. We have seen several instances where the affection had been endured for years, without the cause being suspected; and the relief by the obvious means just mentioned has proved as sudden and effectual as it was surprising and unexpected.

The common practice of stuffing cotton wool into the ear upon every trifling affection should be avoided; it is apt to bring on a delicate and irritable state of the ear, and is, in reality, very seldom necessary. When it is, lambs' wool should be used, instead of cotton, being less likely to leave fibres adhering to the lining of the passage, and thus clog the ear and embarrass the hearing.

To remedy defective hearing, various ear-trumpets have been devised — too many to permit us to give even a passing notice of each. This, however, is scarcely necessary, for the principle of all is the same — to concentrate the sound; to bring directly into the ear waves of sound, which otherwise would pass off in other directions. The variety of form given to them has two objects — the first, efficiency; the other, convenience. As to efficiency, an individual requiring a trumpet had better suit himself by actual trial. We have noticed that ear-trumpets of very different construction have been equally extolled by different persons, and others equally decried; from which we judge that there is a knack in the use, and peculiar fitness in some inappreciable points, which may make one trumpet better suited to a particular individual than another, and yet not so to his neighbor, and not to the disparagement, of course, of the trumpet itself. Metal — tin — has hitherto been chiefly used for ear-trumpets; but now they are made of gutta percha, and, while said to be equally efficient with the others, are lighter, and not so readily defaced by knocks, or damaged by falls.

A trumpet very convenient for conversation is constructed with a bell-shaped piece of ivory at one end of a long flexible tube, and a piece to hold to the ear at the other. It is not so efficient, for general purposes, as the larger and more cumbersome kinds, but does well for the purpose intended.

We saw, some years ago, a very ingenious, and we were told very efficient contrivance, used by a deaf lady. It consisted of a trumpet, made of either horn or of very thin metal, so as to be as light as possible, attached to each ear, and, coming upwards and forwards, to open at the temple; but entirely concealed from any casual observation, by the skilful arrangement of the hair, which the form and color of the trumpet favored. Double ear-trumpets, called "auricles," attached by a spring over the top of the head, are now readily obtained, and persons who have used them have assured us of their efficiency and convenience.

Ear-trumpets should not be used too constantly. They are eminently exhausting to the auditory nerve, and tend much to increase the defect they are intended to temporarily remedy. Persons conversing with one using a trumpet ought to be careful not to speak too loud, but to ascertain the elevation of voice which will suffice to make them heard, and not go beyond it; for every excess of this sort expends, as it were, a portion of the precious auditory sensibility of the other — too precious to be used up unnecessarily.

It is important to know that, in conversing with deaf persons, their ability to hear does not depend so much on the loudness with which a person speaks to them, as upon the clearness and distinctness, and also upon the proper musical pitch adopted in speaking to them. Using care on these points, a conversation may often be carried on with one hard of hearing, at very little expenditure of breath and effort; while, if they are disregarded, the voice may have to be exerted greatly, and yet very unsatisfactorily. Indeed, the power of the human voice,

even in its soft tones, seems very little appreciated. It is told of the great Chatham, that he could make his lowest whisper heard in every part of the House of Commons ; and of Whitefield, that the words of a sermon preached by him in the open air were distinctly heard at the distance of a mile and a half. This latter we were unable to realize, until actually witnessing effects so nearly equal to it as to leave on our mind no doubt of the truth of the statement. One instance occurred at a large fire in Philadelphia, in mid-day, where a friend called our attention to the fact that the orders given by a certain fireman, unassisted by a speaking-trumpet, could be distinctly heard nearly a square off, above all the tumult of the engines and of the thousands of persons collected about the conflagration. His voice was pitched several tones higher than that of the general noise, and *was in discord with it*.

Did it come within the plan of our book to do so, we might say much upon the education of the voice — not for singing only, for which alone it seems now to be cultivated, but for ordinary conversation, and for reading. The complaint is a frequent one that our language is harsh and rough in its sounds, and the recent European tourist is generally full of praises of the sweetness of the Tuscan. We would not, of course, attempt to pit a language containing as many initial gutturals and terminal dentals as ours does against one without gutturals, and whose terminals are only vowels ; but we do say, that, were due attention paid to the proper enunciation of the sounds of our mother tongue, we should find that in its force, precision, and a certain fitness to its uses, we have little left us to wish for. Were this fully understood and acted upon, besides more care in our habitual conversation, more ease to the reader, and pleasure to the hearer in reading, we should have English songs sung as such, and not slurred into pseudo-Italian ones, by running all the words together, and making them as unintelligible as possible.

## THE HANDS.

AFTER our remarks on the care of the skin and nails, and the treatment of chaps, chafes, and warts, we have but little left to say about any care properly appropriate to the hands. There is one disease affecting them, about which we think advice necessary — that is, the one commonly known as whitlow or felon. This generally comes under domestic treatment, at least for the beginning of its progress, until the pain is too great, or the inconvenience and suffering so prolonged as to exhaust patience, when, possibly the physician's aid may be sought. In a large portion of cases of this disease domestic treatment will suffice. A *very* large poultice (they are generally made entirely too small) should be applied, and renewed night and morning. When the matter appears under the skin, it should have vent given it by a free cut, and the poulticing continued until the soreness is entirely gone, when a greased rag may be used for a few days more. This will do, as we have just said, for a large number of cases; but for some it is entirely insufficient, and without more thorough means the usefulness of the finger is endangered, and the loss of it even risked. The reason of this difference between whitlows, as to their severity, is this: Each finger is enveloped in a sheath, like a glove-finger, made of a very strong and resistant membrane, beneath which the tendons moving these extremities play. Now, if the inflammation constituting whitlow commences among the outer layers of this sheath, or entirely outside of it, — between it and the skin, — the matter finds its way easily to the surface, and is there discharged. But if it commences beneath the more resistant layers of the sheath, — next to the bone, — the matter cannot find its way out, and therefore burrows around the bone, and in among the tendons, destroying both these structures to a greater or less degree, and, of course, impairing the

movements of the finger, and even causing its loss, from death of the bone. The domestic treatment of whitlow should not, therefore, be relied on too long; — if speedy relief be not given, a surgeon should at once be applied to. We have several times been consulted, in such cases, when there was nothing left for us to do but to remove the joint, the bone being entirely dead, and the tendons completely disorganized.

We have, when speaking of nails, mentioned the deformity produced by the habit of biting them; a still greater one is produced by that of sucking the fingers, when it is continued beyond the age of infaney. From the continual congestion of the part produced by this habit, the finger becomes permanently bigger, thicker than the others, and enlarged at the end. The same means may be taken for breaking a child of the habit that we advised for that of biting the nails — dipping the finger into some bitter tincture, or wrapping it in flannel, or some harsh substance, unpleasant to put into the mouth.

We have often seen young girls prohibited from particular kinds of exercises, for fear of making their hands clumsy; we know, indeed, of many who are kept from physical training, that would be greatly beneficial to them, on account of this apprehended deformity. It is, however, for the most part a mere notion. Of course, the exercise of any member or organ tends to develop it; and, undoubtedly, a girl who exercised her hands would have stronger and larger ones than one who did not; but it by no means follows that her hands would be less seemly. On the contrary, the chance is that exercise will properly develop the fingers into a shape far more graceful than that generally exhibited in the attenuated appendages to do-nothing hands; and the whole extremity will be much more pleasingly rounded and filled out than when it has never been subjected to that use which is absolutely necessary to insure health and perfection of form in any living thing. The benefit likely to accrue to the general system ought, however,



to be valued so highly as to make this concluding paragraph unnecessary.

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## THE FEET.

UPON no part of our persons have the effects of a faulty fashion of dress more strongly impressed themselves than upon our feet; and this so generally and unexceptionally, that no standard, probably, could be found amongst us, with which we could make such comparisons as would demonstrate the full truth and force of this assertion. We well remember the first foot we ever saw which had attained to adult age untrammelled by the deforming and stunting influence of a shoe. As much as our knowledge of physiology had prepared us to make, as we thought, ample allowances for the effects of compressed and distorted bones, for displaced tendons, and for blighted muscles, we were, nevertheless, surprised greatly at the contrast between the gaunt, angular and attenuated members that had been encreased from childhood in shoes, and the foot to which an Arab sandal had allowed every development that Nature intended. Full, rounded, and even plump, in its general form, it yet had great expression in the markings of muscles, well brought out by habitual use. The arch, though not supported, as ours is, by the shoe, still retained an undiminished curve, and gave another proof of the falsity of our notions that Nature ever needs some help of art in retaining her grace of form.\* Each toe, regular in its arrangement, and symmetrical in its shape,

\* We often hear the objection made to letting children run barefooted, that it will make their feet flat. Observation has convinced us clearly that this is erroneous. Amongst those nations who wear sandals, which compress the foot neither in its length nor breadth, flat and broad feet are not more common than with us; we mean feet broader than they ought to be. They might not, probably, go into a French boot, or one of our ladies' slippers, it is true.

was tipped with a nail as seemly as that of a finger, and possessed an independence of play, and readiness of action, difficult even to be conceived of by those with whom these members have ceased to be active ones, and who, in many instances, only realize their existence by the painfulness of the excrescences with which they are furnished.

And why should not the foot have this excellence of form, this elegance of shape? and why should it be restricted in that grace, in that fulness of purpose, for which it was so admirably devised? Of bones, twenty-six enter into its construction, bound together by more than seventy ligaments. To them are attached the tendons of twelve large muscles, which, though situated upon the leg, by means of multiplied pulleys impress their action even upon the toes; while twenty more muscles, with various offices, are to be found in the foot itself. The heel, receiving first the weight of the person in walking, is provided with an elastic cushion to protect it, and to save the rest of the frame from the jar that a less yielding support would give it at every step. Beneath the arch, this cushion, not so necessary to resist direct pressure, is replaced by a powerful ligament to bind the extremities of the arch together, and to thus secure firmness to the support when, in the further act of progression, the heel is raised from the ground. The ball of the foot is then the sustaining point, and fitted for this by another like cushion, while the last support is given, and but for a moment, by the toes, converted, on the instant, by a dozen muscles, into lively propulsive springs, exerting a final effort in transferring the weight of the frame to the other foot. An ingenuity of construction and an elaboration of mechanical detail surely intended for something better than to be wedged into a leather casing, which soon renders much of this machinery useless, and some of it even embarrassing.

The faults of our shoeing — the source of nine tenths, at least, of the sufferings we experience from our feet — are sev-

eral : of size, of shape, of construction, and, in some instances, of material.

Until within the last thirty years, whatever may have been the fashion of the shoe, it was always of a size sufficient to afford ample room for the foot within — sometimes, as is well known, exceeding this standard of propriety, and attaining enormous dimensions, under shapes equally absurd. Whatever elegance they possessed was derived from the material, and from the various adornments of bow, buckle, or other trimming.\* Within the period above mentioned, small feet have been in fashion ; no matter what the stature and bulk of the person, the smaller the feet the better. The consequence is, the shoe † is reduced to the least practicable dimensions, and the material for men being for the most part restricted to leather, the only elegance beyond the workmanship it possesses must be derived from its shape. This, however, must not be attained at the expense of the former. The

\* To show the fancies of fashion in the shape of the shoe, we give the following summary of its modification since the fifteenth century. In the reign of Edward IV., the toes were pointed, and so long that they were often looped up to the knee, and at last had to be restricted in this respect by proclamation. In Mary's, they became so broad at the toes that regal authority had to be similarly exerted.

In Queen Elizabeth's, rights and lefts began to be worn ; and mention is made of corns by Shakspeare, as if they were not unusual then.

“ Welcome, gentlemen ! Ladies that have their toes  
Unplagued with corns will have a bout with you.

\* \* \* \* \* She that makes dainty, she

I'll swear hath corns ! ” — *Romeo and Juliet*, Act 1, Scene 5.

With Charles I., high heels were worn, the toes being broad in proportion ; and, except where the first peculiarity was exaggerated, the shoe at this time probably had as reasonable a shape as it ever had.

In George the First's reign, the toe was square, but probably not a favorite fashion with the elegants — “ Old Square-toes ” frequently occurring, as a significant epithet, in the plays of that time.

† We use the word *shoe* generically, unless the distinction is particularly made between it and the boot.

consequence has been, that after reducing the dimensions of length and breadth to the utmost, the only parts remaining available for modification were the heel and toe. The former, while with women made scarce thicker than the rest of the sole, with men increased in height, reaching its maximum at the preposterous elevation of about an inch and a half, some fifteen years ago. This threw the weight forward upon the toes, and, forcing them into the flattened extremity of the boot, soon tipped the upper surface of each joint with a corn; an inconvenience that in a short time corrected the absurdity of the fashion, and left it to those only who, considering themselves curtailed of fair height by nature, deem an additional inch of stature worth the pain. The toe was still left to the arbitrary tyrant. At one time it was broad and square; and whatever objection there might be on the score of grace to the foot terminating in a shovel edge, there could be none on that of comfort, so far as room for the toes was concerned. This, in time, changed. \* The angles were rounded off, and gradually that portion of the shoe beyond the ball of the foot was narrowed, the most projecting part being as much in a line with the axis of the foot as possible; a truly absurd shape, suitable only to a foot which has the great toe in the middle and the others in pairs on each side of it. Thus the shoe pretty much remains; at least, these are the faults, to greater or less extent, with all, unless exceptional ones, now worn: they are too small in length and breadth; the toe on the inner side is so rounded as to leave no room for the great toe, which has to be bent outwards to suit; while, in a similar rounding on the outer side, though to a greater degree, the existence of the little toe is entirely ignored, and it has to find a place where it best can — generally under the one next it.

The results of these faults are, from the shoe being too small, the foot is cramped, the proper play, and consequently development, of all its parts prevented, and the general effects

mentioned above produced. When the boot binds on the instep, a very painful little tumor is gradually formed at the most restricted point, often requiring to be cut out, and sometimes implicating, in the inflammation apt to accompany it, the tendon passing alongside of it, that of the muscle which extends the toes. When too large, the consequences are not so bad; but the foot is liable, from too great freedom of motion, — from being alternately pressed forward into the shoe, and partially lifted out of it again, — to chafe, and corns are thus as readily produced as with shoes too tight.

When the shoe is too short, the nails are pushed against their roots, painfully irritating them, and in time producing a thickening and distortion of the former. This, if long continued, can never be cured, but remains a source of perpetual annoyance.

When, from fault of shape, the great toe is thrust outwards, as we have above mentioned, a strain is kept up continually upon its joint with the foot; the ligament soon yields, and an angle is formed. This, in its projection, receives an undue share of the pressure of the shoe. The least evil that follows is a large bunion; to a meteorologist an admirable barometer, but to one not addicted to investigations of atmospheric changes, a source of never-ceasing annoyance, and one requiring continual care to keep it within the bounds of ordinary endurance. If it takes on, which it is likely to do, inflammatory action, the joint immediately in contact with it, and already stretched partially open, exposing its delicate internal structure, generally shares in the inflammation, and the trouble becomes a very serious one. The flesh on each side the nail, which ought not to be raised any more than that on the thumb, is pushed up, so as to entirely imbed each edge, particularly the outer one. The hard substance pressing into the flesh produces inflammation, frequently of a most tedious and troublesome kind, requiring sometimes that the nail should be torn

out, in order to remove the exciting cause, and permit the reëstablishment of a healthy action. In several instances, we have seen the second toe forced up, so as to have to lie upon the edge of the great toe, and that of the third. When this continues for any length of time, it is a tedious and difficult thing to remedy. It is strange that, at the first warning, it should not be prevented.

The effects of the rounding on the outer side of the shoe we have already mentioned ; and we have only to add, to complete the catalogue of the results of this deficiency of common sense, sundry corns that may be distributed in variable numbers on the outside of the lesser toe, and on the joints — in between and underneath the others.

In rehearsing the above faults of shoes, and the evils produced by them, we have had those of men more particularly in our mind. Women's have them all, but exaggerated, with a corresponding exaggeration of the effects ; besides which, the sole is entirely too narrow, and not bearing any relation whatever to the shape of the foot, as the accompanying wood-cut of a fashionable lady's shoe of 1851 will show. It is evident that a great portion of the ball of the foot is unprotected by sole ; and that, also, the little toe must be supported entirely by the upper leather. Besides, these faults, great as they are, are made greater by being peculiarities of a shoe coming up only some two inches on the top of the foot. With a boot, or with a high shoe such as men wear, the foot receives support from the upper leather that covers the instep or the part of the foot between it and the toes. With a lady's shoe, however, there is no support, but the foot, at every step, is wedged forward into the little leather pouch, as it were, squeezing all the toes towards the extremity of it. They had much better adopt the Turkish slipper, only intended for two or three toes, which, however, have plenty of room in it.

To illustrate our meaning more fully, we have had the four accompanying wood-cuts prepared ; which, though not as precise transcripts of our drawing as we could wish, yet still may prove sufficient for the purpose intended. No. 1 represents the sole of a man's shoe, of 1851. The great toe is bent out-

NUMBER 1.



NUMBER 2.



wards, by being wedged into the toe of the boot ; whilst, from the same cause, the joint is made to project, on the inner edge of the foot, entirely beyond the sole intended to support the *whole* foot. No. 2 is the sole of a lady's shoe, devised, apparently, without any reference to the size and shape of her foot,

which has to hang over it on each edge; besides which, the receptacle for the toes is still smaller in proportion than in a man's shoe, in order to give an *elegant* form to her foot, which undoubtedly it does—*after a fashion!* No. 3 is the shoe of a young lady whose inverted toe-nail we had to re-

NUMBER 3.



NUMBER 4.



move. The foot had already been deformed by sixteen years of faulty shoes; but, even after this, the great toe was bent a half an inch further outwards when her shoe was on. No. 4 is a shoe made on proper principles. The inner edge of the sole is perfectly straight, not interfering at all with the natural



direction of the great toe; and the toe part is sufficiently wide and roomy not to alter the shape or situation of the others.

The prevention of all these evils is one which we take for granted the reader has already anticipated — to have the shoe made to fit the foot in size and shape. To attain this, stand with the naked foot upon a sheet of paper, and let another make an accurate outline of it. To shape the sole of the shoe from this, the size of the heel will not require altering. From the inner side of this, if the foot is not deformed, a straight line carried forward will skirt the whole inner edge of the great toe; this should be unaltered in the main, only rounding it out under the arch of the foot, where the sole is always made narrowest. Begin on this line three-quarters of an inch beyond the end of the toe, and shape this end of the sole by a proper curve, falling back at its outer end towards the lesser toes. So far it is plain work. It will now require some judgment to furnish the outline for the outer edge of the sole; that is, for the line joining the heel with the outer end of curve just mentioned. If this line is carried too far out, the sole will be broader than necessary, and the toes chafe from too much motion in the shoe; if not far enough out, they will be too constricted, and the common fault of the shoe be perpetuated. The rule we have found to answer, in the average, is to let this line cut off the three outer fourths of the breadth of the little toe. This will give room enough, and yet be a snug fit. The rude outline may now be finished by harmonizing the curves and rounding off the toe of the shoe, as far as it can be done without affecting that point of it occupied by the foot. The process may require some ingenuity; but is not in itself difficult, and it is the only way of getting a shoe properly, or, indeed, really fitted to the foot. The straight line on the inner side we consider of great importance, — it is the natural direction of the great toe, and any deviation

from it is a deformity.\* For some time the writer found that his foot always pushed off at the side of the sole, which wore entirely through on the outer side before any marks of wear were elsewhere shown. The shoemaker tried to prevent it in various ways, — one by making that edge of the sole three times as thick as the rest, so as to throw the weight of the foot inwards, — but in vain. A little consideration detected the cause. The shoe was pointed so as to bend the great toe outwards; rebelling, however, against this, and being the stronger, it thrust the others aside in order to get its proper position with relation to the rest of the foot. Having a last made as above directed, the difficulty was perfectly remedied, as well as a disposition of the nail of the great toe to grow into the flesh, and of a corn to form on the outside of the little toe; besides which, — saving, of course, the effects for the first day of a slight stiffness in the new leather, — new boots are just as easy and comfortable as old ones, a luxury which many will confess is inexpressibly great.

With shoes, the sole being designed, it is not difficult to fit the upper leather; but with a boot great care is requisite in forming the part over the instep. It is apt to bind just at the highest point of the bone, and produce the troublesome tumor above mentioned. The perfect boot should be so fitted that, in throwing the weight upon the foot, the forward pressure is borne equally by all the leather across it from the instep to the root of the toes, and not by a limited portion just over

\* Since writing the above, we have seen some suggestions on the same subject in the *Lynn Almanac* for 1851, illustrated by a diagram. The writer's principles are correct, but his practice is adapted only to a deformed foot, and the one he has drawn represents the great toe, bent outwards at an angle of  $45^{\circ}$  with the axis of the foot, instead of being, as nature always makes it, parallel to it. It undoubtedly, however, is a correct representation of forty-nine fiftieths of the *refined* fashionable feet in existence.

the former. The Oxford shoe, which laces up high on the instep, is the best form of shoe worn, on this account. The pressure on the top of the foot can be regulated by the lacing with great nicety; and, for comfort in every respect, they greatly excel boots, except in very wet or snowy weather. Another fault in shoes is having the heel too short from back to front. It should extend well forward so as to receive the full weight of the person. If it does not, as the shoe becomes old, the foot will have a tendency to settle too much towards the toe.

As to the material for shoes, nothing is better for ordinary wear with men than calf-skin, for which, with women, goat-skin may be substituted, as lighter. With a view to coolness and comfort, however, many other kinds of leather, as well as woven fabrics, may be used. For tender feet, moose-skin dressed soft, in the same manner as wash-leather, is a most admirable material. It is dyed of any color, and is cleaned by brushing the mud off when dry, and rubbing the spot with a piece of prepared chalk colored to match. In Madeira, boots made of deer-skin, and goat-skin, dressed in this way, are almost exclusively worn by gentlemen. They suit the climate admirably, and are very comfortable and neat; though they have one fault when worn very constantly, in making the feet too tender to wear readily shoes made of firmer material. They would, however, serve excellently well for our summer months.

Though having the shoe properly made is a preventive against the damage to the foot above described, and though it would be the first step in an effort to remedy such damage, the effects last beyond the cause; and we, therefore, offer directions for removing them, or, at least, lessening the annoyance attending them.

CORNS are the foremost, in frequency and amount, of the evil effects of badly-fitting shoes.

It will be remembered that, in speaking of warts, we described them as consisting of enlarged papillæ, covered with a correspondingly increased scarf-skin, hardened and thickened to the density almost of horn. Corns are much the same in their primitive structure. They can, however, be accounted for much more directly and satisfactorily than warts, and their natural history be more clearly and readily detailed. If, when unaccustomed to using it, we employ our hands with any mechanical tool, — a screw-driver, for instance, — we find that where it exerts a pressure against the skin a blister is raised; that is, the sensitive skin, and more particularly its papillary layer, is stimulated to pour out a fluid which separates the scarf-skin from it. If the blister so made be let alone, in a few days it becomes dry, and in time the raised scarf-skin peels off, leaving beneath it a new one, somewhat thicker and harder than the first. If now we go on using the screw-driver, this hard spot becomes harder and larger, and, in fact, forms a thick pad for the protection of the sensitive skin. So far it is an admirable and kind provision of Nature to meet her necessities. But Nature, as kind as she is, will not be imposed upon — will not permit herself to be overtaxed. If the screw-driver is used too constantly, this hardness or *callosity*, which she put there to protect the more tender tissues beneath, will become inflamed and painful, and any pressure upon it will cause great suffering. If, in spite of this warning, it is still further and constantly excited, all the unpleasant symptoms will be aggravated to a great degree, and a permanently diseased condition of the part result.

Now, what we have just been describing is the natural history of every corn. The shoe binds or chafes (for chafing, as we have said, will cause a corn as well as pressure — a loose shoe as well as a tight one), and a callosity is created on the irritated part. If the warning is taken, the corn may be prevented, and the part will return to its natural condition. But,

unfortunately at this stage it excites little attention. Even when the pain commences, it is generally felt at first only during the daytime, when some extra demand has been made upon the feet; but at night it is easier, and the prospective sufferer is sleepy, the thing is forgotten or disregarded, and so time passes until a thorough-bred corn is established. Even now much might be done to restore the part to its former state, but seldom is anything rational attempted. A few household remedies, the excellence of which seems generally to consist in antiquity and mysteriousness, are used; and, if they fail, the case is looked upon as hopeless. Possibly, in despair, a physician may be applied to; but often, long before this is done, the case is beyond his reach. The inflammatory process has not stopped with the true skin. The slight thickness of cellular tissue that is interposed between it and the bone has been invaded; the covering of the latter — the periosteum — is thickened, nay, the bone itself is often implicated in the disease, which cannot now be removed except with the toe itself.

If the corn be examined carefully often a small translucent spot may be seen in the centre. This latter is caused by a small cavity, at first containing fluid, like the blister above described on the hand — sometimes blood. The layers of epidermis, which are generally so many individual mementoes of irritations inflicted upon the corn, can be peeled off to some extent without pain; but, on getting to a certain depth, as with warts, both pain and bleeding are caused. If still further attempts are made to remove the scarf-skin, it will be found attached, as it were, by fibres, to the sensitive skin; these, in the language of quacks, are called the roots of the corn,\* but, in fact, they are nothing more than the epidermal

\* Quacks insist much upon the importance of the extraction of these roots, for they say if one is left the corn will return. To show their devices, a noted one waited on a friend of ours in Paris, and exhibited a book filled with distinguished names — mostly of Englishmen — cer-

coverings of the enlarged papillæ, which latter, on their removal, are left red, exquisitely painful, and generally bleeding.

**THE TREATMENT OF CORNS.** — The shoe first being properly fitted, if the corn has just commenced; — presents, in fact, only a callosity, a thickening of the scarf-skin, — it will often not be necessary to do more than to wrap the toe, if the corn is on its outer side, with a soft linen rag well smeared with sweet mutton or beef tallow, doing this faithfully at every morning's toilet. If it is between the toes, it will suffice to interpose between the corn and the opposing surface a little cotton wool, or a piece of soft moose leather. This is very simple, but it will prove perfectly effectual, if properly and regularly attended to.

If the affection has gone beyond this, and a regular corn is formed, sensitive at the base, we have to proceed further. And here, as becoming more of practical use, we must point out the difference between two kinds of corns — a thing which we did not previously, for fear of complicating our description of the genus. Corns that form on the outside of the little toe, or on the top of the others, are, for the most part, hard and projecting, and until an advanced stage are not remarkably sensitive. Those situated between the toes do not project much, but press backwards into the true skin, producing much more rapidly and effectually than the others a disorganization of its delicate structures, and soon affecting the tissues beneath, as we have above mentioned. From their being kept constantly bathed in the perspiration of the feet, they are soft, and the

tifying to his excellence in extracting corns. He delivered a dissertation on the importance of extracting the roots, for which operation he asked the moderate sum of a guinea a root. Measuring our friend's corn by his purse, he told him he supposed it had about twelve roots. He had, however, made a false estimate of the credulity of his auditor.

outer layers of the thickened scarf-skin can generally be easily detached with the finger-nail, leaving a concavity, at the bottom of which is seen, as we have described, the red and sensitive papillæ. In treating corns of either of these kinds, we must commence by removing the scarf-skin. In the soft ones, as we have just said, this can readily be done; the hard ones, to facilitate it, should be soaked in warm water; or, what is better, poulticed until they are perfectly softened. The best instrument for assisting in our endeavors is a pair of scissors with one sharp-pointed blade; at least, this is decidedly the best and less likely than any other to do harm in hands unpractised in surgery. The sharp point should be put in flat-wise carefully at one side of the corn, and carried across to the other. The sensation of the patient will advise as to how deeply this can be done. When carried across, the blades should be closed, and thus the thickness of epidermis is cut through, leaving a sharp edge on each side the cut. These sharp edges can be readily seized by the thumb and finger nails; and by these means each half can, if slowly and carefully done, be peeled off from the corn, which should then be covered with a piece of soft kid, or buck-skin, smeared with Canada balsam. To guard the tender surface from pressure, a wad of cotton wool may be placed over it, or, what is better, a piece of thick but soft moose-skin having a piece cut out of it a little larger than the surface of the corn. The pressure of the shoe, or next toe, it will be seen, will be entirely removed by this from the affected part, and borne by that around.

It should be premised that this treatment, simple as it is, must not be undertaken if there is any inflammation in the corn. This last condition, which not inoften occurs after a walk or dance, and which is sometimes accompanied by collections of matter beneath the scarf-skin, must first be entirely subdued by rest and a poultice.



If the corn has gone on to the last stage, if it be immovable, have habitually a very tender base, and the pain of it affects the greater part of the toe, showing that it is no longer a disease of the skin simply, but that the highly organized structures forming the toe are also implicated, we must beware how we meddle with it in the manner just described. Indeed, now the less done to it directly the better. Much however, may be done indirectly, by attention to the shape of the shoes, and making them, as above suggested, of moose-skin; and also by relieving it of pressure by means of the small pieces of moose-skin before mentioned. The irritated state of the toe may be much lessened by softening applications, poultices and wet rags at night, mutton tallow or Canada balsam during the day, when the others would be inconvenient.

We have thus given all that we have thought fit for the reader on this really important subject, the treatment of corns. We have ignored many remedies, it is true, and many of great repute; but we cannot believe that any are better than those that common sense, directed by an enlightened understanding as to what is to be done, would dictate. With such views, we have essayed to enlighten the understanding of the reader as to the true nature of corns; and we believe that the course of treatment we have advised for them is such as his common sense will have confidence in and approve.

**BUNIONS.** — The first step towards the formation of a bunion is wearing a shoe which will bend the great toe outwards, so as to make an angle at its joint with the foot. (See the wood cuts.) This angle receiving not only the continual pressure of a too narrow shoe, but an increased one every time the foot is thrust forward into the shoe, becomes irritated, and something like an incipient corn, only on a more extended scale, is formed. There is, however, this addition in the bunion to the construction of a corn. The spot at which the angle above



mentioned is formed Nature has attempted to protect from all unavoidable chafing, by placing there just beneath the surface a little bag, called a bursa, which, being filled with a glairy fluid, enables the skin to glide readily over the parts beneath, and thus shields it and them from irritation. Our disregard for propriety turns this kind and ingenious provision of Nature to our harm; for the chafing and excitement of the surface is soon communicated to this bag, which is not slow at taking on inflammation, always painful and tedious in such structures. The joint, also, so near and already strained open, has its share in the trouble; and if all this be disregarded, or not properly treated, a very serious and complicated disease may be set up.

The treatment of bunions may be readily deduced from the above explanation of their nature, and from the directions we have given about the care and cure of corns. Happy is he, and more particularly she, — for women, owing to the greater narrowness of their shoes across the roots of the toes, are more prone to bunions than men, — who does not put off such treatment until too late.

**DISTORTED TOES.** — The toes, when distorted sufficiently long to permit the bone to be altered in shape, can scarcely be brought back to their proper condition or situation. When the deformity is detected in an early stage, and particularly in children, it can, if care is taken, and proper means adopted, in most cases, be entirely remedied. With children, where it is practicable, — in the country for instance, — letting them run barefooted, or with the feet clothed in a loose Indian moose-skin moccason, will, generally, of itself, be all that is sufficient. The exercise of the parts will insure their fuller development; and, as this takes place, they, obedient to a kindly law of Nature, again resume their proper form and position. With adults, or where such a course is not practicable, it must be imitated as far as possible, by allowing the

fect the largest latitude comfortable with comfort. The toes that are displaced may be brought gradually into their proper shape by bandages, or bands of tape, or of sticking-plaster, suitably adjusted. For instance, if the second toe is raised above the toe each side of it, first the shoe should be made broader, so as to give room for the distorted member when it gets into place. Then, to assist it to do this, a long strip of broad tape may be used. Place the middle of it over the top of the toe, carry an end down on each side of the toe, between it and the one next it, then bring these ends up on each side of the foot; cross them on the instep, carry them round the ankle, and bringing them in front of it, tie them there. This may look like a confused direction to do something very complex; it is, however, very simple; and any one may do it, if he follows the process step by step, as we have just indicated. The effect of the straps will be to draw the toe down into its place at every tread of the foot. It is scarce necessary to add that the tape should lie perfectly flat, and be free from wrinkles — essentials readily attained by care, and a little practice in adjusting it.

Any further instructions in the application of such bandages must be left to the promptings of the reader's ingenuity, as it is evident that each individual case will, more or less, require a special adaptation to its peculiar wants.

TURNING IN OF THE GREAT TOE-NAIL. — This is a very frequent, and, at times, a very severe and tedious affection, arising from a want of proper breadth in the shoe across the toes. The effect of this want is, first, to compress the toes closely together; next, the flesh each side the nail of the great toe is forced up and pressed against its edges; and, lastly, the nail is bent so that its edges are forced perpendicularly downward into the flesh. An inflammation is soon set up, which goes on until an ugly ulcer is formed where the edge of the nail constantly chafes the soft parts. Proud flesh now shoots

up from this deep fissure ; the root of the nail begins to participate in the inflammation, and there is a tendency to the formation of an ugly, painful, and foetid ulcer, extending from the end of the toe down one side of the nail, and, in prolonged cases, around its root and along the other side also.

When a tendency of the nail to turn its edges down into the flesh is first perceived, a little care will soon remedy it. Shave the nail very thin, from root to end, on a line half way between the inverted edge and the middle of the nail. This can easily be done with a sharp penknife, or a scissors-blade. Then insert under the edge a wad of cotton wool. This will raise up the whole of the nail between it and the shaved part. The wad must, at first, be small ; but it may, in a day or two, be enlarged, so as to free the edge entirely from the flesh. All that is now necessary is to keep it so until a little more fresh nail is formed, which will not have the tendency to curve inwards ; provided, of course, that the narrow and misshaped shoes producing the trouble are discarded. If the flesh is too sore to insert this wad, a poultice should be applied during the night, and a greased rag kept around the toe during the day, in the mean while the softest and broadest slippers being worn. If the trouble has gone further, no time should be lost in applying for surgical aid ; for, if the affection goes to a certain point, the only cure consists in tearing out the nail, or, at least, the offending edge of it.

TENDER FEET. — Some persons, particularly elderly ones, have feet habitually disposed to become chafed and irritated, upon very slight cause. This tendency may not possibly be entirely removed, but much may be done to lessen the consequences of it. The general health and strength of the members may be improved by putting them into cold water every night, and using, after it, considerable friction in drying them. This will wholesomely stimulate the skin and freshen the circulation in the whole extremity, making it much less liable to

take on a diseased action. The benefit, however, stops here, and the rest must be done by using the softest stockings,\* and by greater care in the make of the shoe, and adopting some soft material of which to make it—moose-skin, as we have before mentioned, for instance, or even plush, if the case is an extreme one.

With some, though the feet may bear any ordinary use without suffering, a day's continued tramp, or two or three in succession, particularly if undertaken without previous training, will chafe and even entirely disable them. To prevent this inconvenience, we smear the toes freely with mutton tallow, or some such grease; and, if there is a particular liability in any one to become irritated, wrap around it a well-oiled rag. In this way, a day's hunt, or a walk of several days in succession, has left us with feet as soft and free from tenderness as when we started. We find that Durlacher, in his book on Corns, etc., recommends for the same purpose soaping the stockings well. We can conceive that this might answer admirably, except when wading entered largely into the day's exercise, where the soap might, at an early period, be all washed out, which could not happen with the grease. With the above, wearing the stockings inside out is good precaution against the seams chafing.

When a boot binds the foot at any particular point, inducing pain and irritation, and the means of having it stretched are not at hand, slitting it open at the spot is a very common remedy. It is generally done, however, by one slit, which gapes open, and leaves that part of the foot without support or

\* We have lately, in a surgical case, prescribed stockings of wash-leather; and find them to be most admirable, for the warmth they give, and their grateful softness to the feet of the patient. They must be made very carefully, as the seams require to be strong, and yet must be formed without overlapping. They would prove very excellent for tender and for habitually cold feet.

protection. A much better way is to make a number of small slits, the number being regulated by the wants of the case, alternating them thus, — the slits, of course, —  
 being transverse, as in the other case, to the ——— ———  
 line of constriction. Each slit will gape but a ——— ———  
 little, yet, altogether, they will give the desired ——— ———  
 ease, and the foot at that point will still be ——— ———  
 covered by a sort of leather network. ———

CHILBLAINS are the result of exposure to very severe cold, followed by a too rapid heating of the part. The symptoms are, redness, swelling, and an intense stinging pain. If the part has been frozen, the skin may be raised into a blister; and even very ugly ulcers form, if the affection extends deep enough.

Prevention, in this, as in all other such affections, is better than cure; and persons should be constantly on their guard in cold weather, first against subjecting their feet to the action of cold, and next, if affected, they should take care not to heat them too suddenly. Dipping them into cold water and rubbing them is the proper way to restore circulation. Chilblains, provided the skin be not broken, are best treated by stimulating washes — beef-brine, bay-rum, or we like as well as anything else turpentine or camphene. If the pain, however, be great, the use of these may be prefaced by keeping the affected part bathed in equal parts of laudanum and spirits of camphor.

SWEATY FEET. — The feet of some persons are disposed to perspire very profusely. When this is accompanied with coldness, it is a sign of general debility, which must be combated by constitutional treatment, though, at the same time, this unpleasant symptom may be lessened somewhat by rubbing the feet with dry salt, or by washing them in water acidulated with nitric acid. At other times, this seems to be a personal peculiarity, and it is then very difficult to remedy, though the

annoyance from it may be somewhat lessened by frequent bathing, changing the socks, and wearing light shoes.

GENERAL CARE OF THE FEET. — After our previous directions for particular cases, and the suggestions which will occur from them, we have little left us to say here.

The feet should be washed daily, and wiped carefully, particularly between the toes, where the scarf-skin is apt to collect. The nails should never be torn, but trimmed with scissors, and not too often or too closely.\* That of the great toe should be cut almost straight across; the angles will then project beyond the flesh, and not be liable to chafe it, or to be turned down into it.

As to stockings, — putting aside, just now, the consideration of the material, — the seams should not be prominent, — a frequent fault in children's socks, — and the stockings should fit well, not contracting the toes, nor leaving loose folds to press the foot.

Children claim particular care for their feet, as much of the mischief from which we suffer in after life is prepared for us before we are able to take care of ourselves. At this moment we have the care of a lady suffering from an inverted toe-nail, surmounting a distorted toe, which for ten years she has been trying ineffectually to combat with loose shoes. The toe was bent before she took care of herself, and she has to carry through life the effects of carelessness or ignorance in her parents. Children are but little apt to complain of any annoyance to their feet until they can endure it no longer, and much of the trouble from which the feet suffer does not at

\* We knew a gentleman whose care of his feet almost amounted to foppishness, though his age would save him from suspicion of any such weakness. Upon rallying him on the subject, he answered that his conscience would accuse him of hypocrisy, if he took less care of his feet than of his hands. It is pleasing to add that his morality in higher matters was as nice, and his conduct as consistent.

first give warning by pain. Their shoes should be very carefully looked to, and be made broad, and of soft material. Boys old enough for violent play are notoriously "hard on their clothes;" and, with views of economy, are often expected to wear shoes of as stout materials as those of their fathers. The leather may be strong, but it ought to be particularly soft. Children should be supplied with but one, or, at most, two pairs of shoes at a time. They often have several, which are used until worn out, the parent forgetting that, while the child's foot is growing, the shoes are not. Inattention and thoughtlessness on this one point we conceive to be a prolific source of deformity of the feet.

On the other hand, persons who have attained their growth will find it advantageous to have a large number of shoes — at least, three or four pairs — for ordinary use. This will do away with the necessity of putting on a wet pair, and will give opportunity of having the shoes properly sunned and aired. Every person should have a pair of lasts modelled after his feet, and only use shoes made upon them. It surely is more important, as far as physical comfort goes, that a shoe should set well, than that a coat or dress should.

COVERING OF THE FEET IN REFERENCE TO GENERAL HEALTH.  
— We have hitherto spoken of the feet solely with a view to their particular comfort and ease. They have an influence, however, upon the general health, through their susceptibility to the effects of cold and moisture, which requires attention. Few persons are aware of the extent to which the impression of cold upon the feet is felt by the rest of the system; and we fear it will be difficult, without enlarging upon the reasons for this more than we can do here, to make the reader fully appreciate it. We have frequently traced an attack of piles, for which our patient was wholly at a loss to account, immediately to walking on a cold ground with shoes too thin. The predisposition, of course, already existed, but might never

have been developed but for the imprudence. We are convinced, too, from repeated observations, that the periodical suffering of women is often due to the same cause, not only directly, but indirectly also — the organs concerned being first put into a state of habitual congestion by the cold driving the blood from the feet and legs, where, in consequence of their distance from the chief propulsive organ of the circulation, and from the height of the column of blood in the veins retarding its return, the movement of the fluid is always more languid than elsewhere. That very common affection, chronic sore-throat, attended often by lengthening of the uvula, by enlargement of the tonsils, and always by a general fulness of the vessels of those parts, is very readily affected by the temperature of the feet — a fact, however, which we find patients seldom realize. Of graver diseases — those of the chest, for instance — we deem it unnecessary to say anything; for, by the time they have made a good lodgment in the system, the individual has had his fears excited, and becomes generally careful enough, though possibly too late in his care; but we are anxious to warn the reader against the above-mentioned sly aggressions upon the health, that come without warning, and in the guise of a slight local affection, and that often effect irremediable harm before they are recognized as at all important.

To protect the feet from cold, the soles of the shoes should be made much thicker than they are now, particularly with women. As we have before said, men find theirs none too thick, if in the winter time they are fully the fourth of an inch — but often have them thicker. Yet, women will brave the same weather on a sole of the eighth of an inch, or less. If a clumsy appearance is to be avoided, the soles can be bevelled at the edge so as to seem thin, and some of the thickness also may be made up by the inner sole. An excellent material for the last is cork covered with a thickness of woollen



eloth. Some women, we find, wear light India-rubber shoes over their others, thinking that these will compensate for thin soles; but they do not. India-rubber is a good conductor of heat, and, therefore, badly qualified for preventing the escape of that of the sole. They make the foot perspire, it is true, but do not necessarily warm it; and, indeed, may do harm, by the moisture they cause in the stockings. For men, the upper leathers, as well as the under, may be made double, and, if of good calf-skin, will not prove clumsy.

As to the material of stockings, we leave the question to be settled by the necessities of the individual — not laying down an unqualified rule, as persons are apt to do who find one kind in particular suits their individual ease. For some, good stout cotton is perfectly sufficient, even in the coldest weather, while others are better for wearing woollen all the year round. For feet habitually very cold, the wash-leather stockings, previously mentioned in a note, would prove more efficacious than any other kind. Women seem to have as much objection to woollen stockings as they have to thick shoes, for the same reason, — or rather want of it, — that they make the feet and ankles seem clumsy. We wish that, for their winter fashions, at least in this part of their dress, they would not stop at Paris, but look to the other side of the Rhine.

For protection against wet, India-rubber over-shoes are the most thorough means. They have the objection, besides that of their additional weight, of making the feet perspire very much. A layer of India-rubber cemented to the sole answers admirably, where a wet surface only, or a slight depth of water, is to be contended with; and in the south we have seen a shoe very extensively used which has a modification of the sole with the same intent. This consists simply in making the sole project beyond the upper leather about a quarter of an inch all round. The effect is, that snow, slesh or mud, unless very deep, never touches the upper leather. It is a Scotch

contrivance, and so efficacious that we have been surprised that it has not long before this become common amongst us.

As with many it is very inconvenient, in their frequent going out and in doors, to put on and off India-rubbers, we will conclude these remarks by giving a process for making water-proof boots, in our opinion of the excellence of which the personal experience of full fifteen years has more and more confirmed us. Have your boots finished (as, indeed, they ought always to be) some three months before it is intended to use them. For two weeks smear them liberally all over, every other morning, with raw linseed oil. By the end of this time, or possibly before, the upper leather will have become saturated; but the soles and seams may require a still further supply, which should be given, until they are also full. At the end of another week rub them well off with a piece of cotton cloth, so as to absorb any surplus of oil, and let them alone until wanted. In two or three months the oil will have become dry, and they will take a polish as well as any other boot, while they will, if originally well made, be proof against water. This will answer for the lightest dress boots or shoes, as well as for others. The only objection we have yet suspected to this process is that it may, to some degree, rot the thread, and possibly also the leather; but even this amounts only to a suspicion, and friends, who have tried the experiment, say it is unfounded. The advantage of it is incontestable, and fully great enough to compensate for all the trouble, and for a possible curtailment in the duration of the boot.

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